A New Foundation for Systems of Logic:
Logic, Topology, and Absolute Truth

Paris S. Miles-Brenden

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What is the main principle behind all of mathematics? To pin this one thing down, as absolute, is it seems, of a false nature. There is however an impression in my mind, of the notion of continuity in all things. At a point where there is a notion, of mathematics, we see the nondescript and invisible, the exact and the diffuse, the simplicity of the one, and one of each within the other. The random, truly does enter, and there is the stochastic, the predetermined, and many times the absolute, in a form of open creation.

The equations, each expressive of a connection, every character and drawing engender a notion of full meaning. A complete and co or with-one-another and unity together create the counitive, a unity within each that when put together creates a greater unity. Additionally there is a unilateral and equivalent form of truth called existence. There are several words generated by this one. For example, counity means two things each with a notion of a unity preexisting, that when put together generate a greater unity, and an affinity for unities.

The thesis of this paper is that while we may use numbers for logic as to the number theoretical properties of spaces, we may also then use the analysis of numbers as an analysis of logical systems and there theorems. The hypothesis is that with a new notion of modifier on logic the language thereof and driving of both although unhinges all of these disciplines and is the essential primary aspect of their development, a moving mathematics of motions. Our primary assumption is that logic is the even-ruled set theoretical approach of associated operations, or even topologies.

Our primary motivation is to introduce the notion of a connected topological space for a logically based system, with the ideal objects circles, a natural

embedding, yields a theory of a ring based space, or a field space, because of the natural notion of a function, or a vector, within this space. With this, we develop a new notion of operations as affixes or number or number series modifying lexicons. In this we may many new discoveries, and conclude, this new notion of that within the same category of symbol, number, and word, is generative of the true nature of question and the transformation leading to answer. These aspects are seen now in both language and in the discipline of math so brought together. As well, we have logic and topology here interrelated via the absolutes existent in each. It is only once we bring these different strands together that one truly understands the origin of such a new word with the patience so required to bring this word into creation and understanding. These new words take time, as do mathematical definitions.

Abstractly it is a logical character syllogism of augmenting operational derivation, or variability as a directrix, rather it is an idealized sort of function. These new notions for function have the capacity to store linear relationships between nonlinear concepts such as we witness in language itself. This can only be described as a function that has two parts, as with a complex number. Our primary motivation is to introduce a new notion of modal operations, or in language as affixes, for number or number series modifying lexicons.

Here is an analogy to music for help:

$$\text{vocal} : \text{note} : \text{chord progression} : \text{composition}$$

$$\text{word} : \text{number} : \text{function} : \text{passage}$$

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The essence of mathematics is complete continuity, rationality of way, and free juxtaposition of absolute and flexible or full or at times nascent notions once contrived of, and free of constraint in the full abstract space of reason and

continuous form of logic. This is a tile puzzle laying in the middle of a forest with pieces all movable as one or separately. It sparkles with the imagination and lusters in an affinity for macro and micro layers finely overlapped, in a symphony of loving gestalt, prepared freely for those who question everything, and open to all who are willing to enter justly, freely, and without reservation of bias. I believe that math has its root or origins in a love for the descriptive or description of the beauty of nature. We cannot hope to describe all of creation in an equation, or in a moment. Math is beyond the infinite. It is easy to some, and, difficult to others. But, it always moves forward in nuances.

There are many new aspects to math in this paper, but they are not entirely new. To work on this notion that points are made of circles is but a different view. When we take the circles and make them points in the old setting, we lose one thing, orientation. Regaining this we get logic. One dimension has no place but for points, two dimensions needs orientibility, and three dimensions does as well. Together, we find a series of conditions imposed on math in each dimension. This is odd, but is purely about dimension and topology, and the rules that result in two dimensions with continuity and evenness of interrelated parts in existence.

The most universal aspect of mathematics is its universal character to be known and understood on a variety of levels. It possesses universal symbols. These have the capacity to articulate thoughts even when there appears to be none itself in language. These two took a strong departure from one another a long, (very long) time ago. But, they are still there in our minds as things or objects to be manipulated, and used to uncover truths. This math still exists, and it is helpful to at least question two things; How did this mathematics emerge from a mind of many similar thoughts, and where is its origin? As well, what was the original concept of mathematics?

Zero

The concept of zero is very basic and at first indications appears to be the absence of a thing. But this is for it to be taken as in relation to something when it is actually nothing in this context and for it to pertain to a thing. This is deceptive, because as it relates on the fundamental level it relates only to

numbers. How could a concept pertaining to numbers or the true absence of a number really pertain to anything else. How could such a number exist at all if it is the absence of this very thing. As we examine this number, does it appear to change? It does not. Fundamentally, it has to do with a relation. However in this sense there is not none but one. There exist many other potential relations to a thing when we have a number other than zero. Even one pertains to the number of a pure property that an object has. When we consider the other numbers we find that they each possess a property of existence. However, how can the number zero truly exist when it is something of the nature of an indication of nothingness?

Zero is abstract, but relates to a closeness of absolute form. I would suggest that this number has its origins in looking before all else and wondering what came at an instant, not before the awareness, but at the moment thereof. To even conceptualize this number as something other than null seems to miss its true form. Yet it is the origin. Finding this number, it is abstract once again, yet always incomplete. This number also is symbolized in the circle, yet it is not the circle with this early concept. If we draw upon the circle, then we find an indication of emptiness in zero, but it is certainly not this. Abstractly once again, if we use zero, we arrive at zero, or where we started. From this, it represents a step back from where we might have went, to where we were.

I would say, specifically with relation to what was written, that this number is the essence of completeness in nothingness. Nothingness in completeness, and is something inexpressible except as a concept. All changes with this number, yet it is invisible. As a single piece of a puzzle, it is whole in and of itself, yet empty, devoid, and yet, needed. Nothing can be more abstract than this, to say that we have something, when it is a thing without change, formless, and also invisible in every sense. But this is not so much the mathematical symbolism of the number, as its use in practice. I picture two people holding a zero, but we would have no way to touch or feel such a thing. We cannot share a zero, nor can we mingle in one, but instead, can only stare and yet, not see it. I think the number is fastly unaware of its own existence. So perhaps this is it, simply a self negating entity without a source or a sink. Equal in measure in its existence and nonexistence.

This definitely does have a purpose, but does it have a relation to truth? This is the truth that touches on itself and says, "I am not here". In between

all things, the question becomes, does the truth exist within this concept? It is not falsity, nor is it pure truth; but to prove such a thing, would touch upon something deep. To again say, this zero is different is false, for all come the same. But if we had one, then what zero says after being found "I am here". The zero is incapable of answering such a truth as being found in this sense, after as such as this is the case.

These, the zero, and the circle of infinite and open truth, as this also exists, are in this way one in the same in their obscurity, yet they are opposites, in the sense of one, after coming into being remains the same forever, while the other pretends to have never existed. In this sense the zero is self closing, the circle, self opening. Yet, there is it seems only one zero and one open truth. The infinite in the one, the one in the infinite. These now appear as different things, yet they are not two. As one, the pertains is as to itself a thing in and of itself yet there nor not there it is the same. We will develop a new notion of zero in this paper given its abstract and conceptually absolute nature of usage in logic as distinct from its alternative meaning, to negate, remove, or be in essence nothing. This is based around the notion that the zero is in practice something which fundamentally does not change, and also is one to one on the level of being an abstraction, when considered by uniqueness to be identifiable with a new object, as an identity in logic. This seems to be one of the two identites in logic, the other of which is the circle or (one).

The zero, being an identity in logic, and the new object we will illustrate the existence of, the circle, as one, point to a deep connection between an object truthfully in existence, with a self identity, and uniqueness, implicating these concepts are related on a fundamental level as zero and one. What they share is different from what they are however. Later, we can understand identity of absolute truth, with a minimal set of two as determining if logic has an absolute truth statement determining properties of the circle of truth, and reinterpreting the compositions of a zero and this circle as the everywhere origin identity of one, as the circle.

Infinity

Infinity on the other hand, is something different in its essence. This element is the unreachable, but exists in the sense of its implications. One could say that it exists when there is a definite limit of none, as it is no number. There is no limit, to infinity. The essense of infinity is a number which is beyond all other numbers. As compared to the other numbers, it is incomparable as they are to it to each of them. An infinity is something that we see off in the horizon from very far away and yet reaches us. All numbers can become infinite given the right circumstances, and this number is sometimes not even considered to be a number, but it is in the sense of being requisite for a notion of completeness. Even zero, when an inverse is taken, becomes infinite.

What is infinity then, but the other side of zero over that of the identity with respect to numbers. It is seen as invioable, but is somewhat empty at the same time, given that there is no point to it. One would not say infinity is everything, nor is it completely devoid of meaning, nor is it nothing in practice. Instead, it is often seen as a single point, or line, or however we visualize it, but it is an empty end. If we had a zero and an infinity, we get the number one when taking their product. One the absense, the other presence. They are complete in their union. This is an absense then, of an unanswerable question, as two coming together to produce certainty in answering one.

Infinity is not self negating, however, it is self hidden in some sense, given it is unreachable by its essence, but is still a given number when we have no end to a process, or a limit. This is always deceptive, for one asks how we reached this point, when, there is none. An example of a hidden infinity is the certain but unexpected. Many times I have thought of infinity as associated with existence, given that it is invioable, and this, seems certain but elusive. Something of absolute form, as infinity is often taken to be, is nevertheless outright open. This is strange to all who understand it, because the absolute is often considered closed. However, the unyielding contains within it an essence of complete stability and dependability.

In the process of approaching infinity the numbers bend back and expose their true form, each contained in the whole. If we do have a circle as we alluded to, how can they work together, when there is no infinity but in consideration of all the elements together. With this we find that the zero in the sense of a

negation or nothing and the infinity are completely complementary, although neither is truth nor falsity, one can be considered the approach, the other a lack of departure. This infinity is another number needed for the circle to approach unity. In the previous section and its sense, zero does not mean the lack of something but the absolute form of nothing. Together however these concepts are each others completion and inverses. These two, one truely nothing, the other truly absolute and existant, they complement one another in either order to produce unity.

Together, we see that if the circle is complete truth we have a complete relation. Together, the circle as one and the zero, as nothing, and infinity are complete in forming a picture of unity, emptiness, and openness, each in absolute form. Each are therefore complete within each other, when we take them each to be independent and interdependent, given their mutual relation of complementarity. I would suggest that infinity is like a passing point of light in darkness, completely obscured, leaving and yielding light ahead and behind, while never being seen itself. Zero seems to also have this capacity, but without any separateness of the point.

If we look at the piece this represents, it is always too big for the puzzle, even to be the whole of the puzzle. It is equal to a number itself to such a dimensionality in magnitude as the number of elements within this number each equal to this number, taken as products between all such equivalent numbers as this for every number, each number equal in magnitude to the number itself, as a counting of all numbers to that point, at one. This number is the only other number besides one and zero as formally defined which folds into itself in such a mutually reflexive manner such as this in both ways only to reach itself again. It is an additional centerpoint. Yet unlike one, this number is unreachable, yet existant, as the others are.

Introduction to Topological Logic

We must take a few assumptions for logic to be considered safe and sane for our use. First, if we can fundamentally prove the existence and consistency of a logical system, then it exists. All logically true statements are connected. The methods of logic work forwards and backwords, meaning logic, has no pretence

for the notion of time.

Qustions: What do we call a falsity that is negated by a falsity, to the point that the first leads back to itself? This is a form of mutual logical contradiction. Do both statements not exist in such a case?

How can we fundamentally understand the nature of paradox, and is there a fundamental nature to these, a notion we can use to resolve all of them with a common form of understanding?

What are the common logical principles that govern the interrelationship or the commonalities between spaces of arbitrary composition, boundary, openness, dimensionality, and orientation.

Is there a new postulate of logic?

With incorporation of this new postulate and openness, logic as a whole is never closed. More compactly, this fifth postulate is openness with respect to the existence of future postulates holding truth or falsity without predetermination. The others are the discernment of truth and falsity from given statements, the existence of truth and falsity as core elements, the inclusion of logical pretences and statements or their exclusion, and the application of postulates in building a system of implicative order. As well, we can presuppose no truth nor falsity and take into a context a statement as a true or false statement, but only in the context of previous truths taken to be absolute. This seems empty, but we do have a start, the statement of what truth means itself.

Refutation of Undecidability as Mutual Truth

How can something be both true and false, or neither? Such a thing would be in essence undecidable. To show this, we must show that there are no two compatible and undecidable prepositions, nor can one exist alone. Can there then be only one? We must find that there cannot, since it would be both true and false, or neither. Since both of these combinations are empty mutually, and exclusive, in the sense of the logical system used to support them, we cannot conclude one from the other and they are disconnected yet would have to co-exist as they are each leading unto a conclusion of the same nature with the same statement as these are related to one another in their common ends,

whether they are together in a string of statements or in a larger logical system, with every truth perpendicular to the mother space of statements, or coexisting as mutual truths in the same logical slice of statements in parallel, as in on the surface of a topological object, and as a series; convergent or divergent.

Taken together they must have the same logical pretences to reach such a conclusion, but foundationally each must exist as one and one the same in the sense of the conclusion. I think we need merely ask if they have reached the same conclusion in the same way, but as they do seem to do so, they would have to be both unsupported in both ways as we will show. They are not necessarily unique in both ways or each way, but as these lead to a common conclusion they would have to be connected to one another, to support such a proof as two logical statements, leading to this conclusion. As for instance two and three clarifiers.

Both and neither clearly are not connected to each other as they either are two independent things or connected within any truely logical framework and as a consequence the logical arrow of proceeding from truth to falsity or falsity to truth is broken as it pertains to these types of statements or conclusions. Logic cannot proceed along such a path, as reaching an undecidable conclusion would in the middle of a series of statements no matter how big or small at the beginning or end lead to a problem along the line at that point. So these paths are broken at some point by falsity. A true statement is a truely false or truely true statement, but not a genuine falsity.

This is clearly an or statement yet it is an exclusive or as it is either truely one or the other and not both, nor neither. Such neither true nor false statements are empty, and perhaps truth does not pertain to them. The 'and' in the statement of both 'and' neither is broken by the fact that it implicates both are true statements, which they cannot be, as these are completely different and exclusive abstract objects and taken with common sense to be separate and independent given it is one or the other as exclusive again and not both of both and neither, which cannot be, by way of the exclusivity of these two as separate and exclusive concepts. We need a good word for the logical state of a statement, which I will call its logical status for now.

If true statements were completely exclusive and independent from false statements in the sense of having no connection, and falsity from truth in a

likewise manner, statements that are both true and false, or neither true nor false, would be possible. This is as we can still take objects from two disconnected sets and consider their combinations. On a more comprehensive level if logic were disconnected at some point the methods of understanding of incompleteness as an abstract concept of logic would be possible. On the other hand, because each statement in such a pair of two or more statements which implicate truth and falsity in one another, or neither, would implicate either a connection which is in the case of neither one not there, or in the case of both a relation where one cannot support the other.

These statements both cannot hold as potential truths given their mutual exclusion of one another, but it is a new kind of exclusion. This process of exclusion is an "if one, then the other, but not one, therefore not either". Or, [("if a then b" and "if b then a") and ("not a and b") therefore ("not a and not b")]. This is a form of exclusion where the presence of one, in an exclusive manner negates the existance of the other, and requiring both to have both, leads us into a paradox when we attempt to have two of inconsistency, given this statement is imiscible with continuity of truth. When we have both with one, and we have neither both, therefore not either one this is dual exclusion. This statement is an absolute falsity then. Additionally, we learn that logical statements can be embedded within one another, and even encapsulate one another in producing a setting for another statement.

The following statement is fundamentaly of the nature of a paradox:

1: contingent:
"if for any of Q-P then one of P" and "if for any of P then one of Q-P"
and
0: primary:
"not Q-P and P"
and
2: hypothetical:
"one of Q-P or P"
therefore
3: conclusive:
"not any of Q-P or P"

From this, the case structure of 0 and 1 allow us to conclude about the hypothetical structure of 2 and 3. We may always reduce to a set of a finite number of elements, with one and the rest of the group found, unless the paradox is infinite, in which case it holds no terminus, and as is then shown by induction

collapses backwards from infinity or along a section. Any circular group in the latter of these statements with a statement that is included and not, serves as a component of this. Q is a group of elements or a string of ordinals which lead to each other sequentially and is inclusive of P. These could be doubled up in any order along neighboring strings with duplicates and we would find a paradox. These are dual paradoxes with a mutually larger and comprehensive set. This means that if the sequence of a paradox is side by side of another, and they share an element, we may get a paradox. We notice there is one fundamental paradox when we terminate with one element in Q, and a statement equivalent to "if Q then not Q". We can also recognize we need a dualistic or to and back series of one or more statements for another kind of paradox.

There is finally a circular case of paradox. We are right to be skeptical of single circular statements. The way to understand the circular cases of size larger than one is to require an auxiliary statement, in which case it is not solitary. To be fundamentally circular we would have a statement such as "if a not a". In this case we finally find that a single "motiv" is the essence of a single solitary paradox. Finally, we recognize that these four in any order or combination will produce a paradox, and in no single instance will it not be a paradox by multiple inclusion, meaning there is no cancellation, and yet, we need this structure to get one. And last, but not least, we find that there must be single elements that uniquely identify each type of paradox which in any combination with the other four will lead to a self negation.

These at the source exclude a statement being both true and false, and neither true nor false, since these are exclusive unto each other, and if both were truely existing in a capacity we would have a division of the truth to extremes where we would not have logical consistency between all statements. As a given that we need logical consistency to have a logical conclusion of truth and logical inconsistency, is introduced by these kinds of statements. They do not exist as a part of a logically conclusive system of logic, bringing into question the validity of this statement's conclusion itself. They are therefore neccessarily nonexistant as a part of a logically consistent system, the very one, which must conclude they do not exist, otherwise it would be unprovable as provable.

At this level, we see that this unprovability of provability implies a statement would violate logic having no arrow, or no mutual directionality in absolute

form. From this, and the known, that these statements are true and false or neither we find them at the beginning or end of their own proofs of existing as well, and find they cannot exist within the direction of logic that moves across a string of given elements or statements to a conclusion, and judged as such. Given that if they possess these properties they must form a logical circle, and without beginning or end, they are then inconsistent. If provable they are unprovable, and if unprovable they are provable. Given these must exist as absolutes, and this statement is given as an absolute, we find that they cannot coexist with the form of absolute nature itself, and must therefore not be elements of any absolute system of logic supported from underneath.

We may find it undesirable to not be able to incorporate these into a consistent structure, but we will find there is a better way to include something analogous to these. These as core statements sitting at the foundation of logic, are both empty types of statements. We will find others, sitting at the core. These truths are open to others, in beginning and end, and we can move to a new and greater logical system, by accepting these other statements as empty, and the others within logic as open to new statements by withholding doubt, and accepting that we do not always know the answer, but if there is to be one, then there is a way, to reach a conclusion, when we move backwards or forwards in logic and use a mutually supporting system of logic to understand openness of truth value.

Given this is true there would be no complete logical oneness between a statement and its conclusions if it existed, and no way to reverse logic to find an earlier conclusion in certain cases. The problem with these is that they would then be points in a larger realm, and would be equivalent to single statements with these issues. Given their mutual contradiction, and dual implication as both existing when we have only one, and the logical contradiction entailed by the existence of both, implies that neither one may exist in a logically sound system. Finally given that this is about the statements themselves, and they can be identified as individuated statements, they do contain a part of their original statement in their conclusion, and cannot be taken back to their start and be considered sound.

As here logically inconsistent, with logic going both ways, logic itself would never be complete, as it would contain statements with no hingal definition within logic. We finally have the neither case to deal with. Since one entitles the

other into existence given the exclusive nature of these two types of conclusions or conditions and if either holds existant the other does also and finally that if one existed the other would, these do not exist given their dual mutual exclusion and it must be that neither alone nor together can hold existant as a potentially true assessment.

This emptiness of both and neither, in being absent from a one dimensional realm, is in fact also empty from higher dimensions based upon exclusive statements that are abbute, or are adjacent to one another and touch each others boundaries, when we consider all truth to be connected. Therefore, there is no logical connection between the two as given (both true and false), and (neither true nor false). Neither implicates truth in the other within statements compared as one of each to the other, since it leads from truth to falsity or falsity to truth. Whether they be both true and false, or neither true nor false, it cannot hold that there is a logical connection connecting these types of statements.

This means the empty statements indicated as those which are neither, are really not statements about logic, and are simply unprovable as exclusively true or false, or both or neither, and yet to be absolutes they would need to be open to determination with later understanding, in which case they are actually open statements without preset values. These statements simply do not have a logical value until determined by absolute truth, which can only be contained in a larger and more comprehensive system of logic, open to freedom of logical value. As we know, logic does not really have an arrow, and we will find that absolute statements of truth are possible and provable given these truth symmetric systems.

With two such statements such as those which implicate falsity in the other, and without two entirely truthful statements of this nature, we cannot arrive at a conclusion of complete truth about the other. Or, as both, one unto the other. One can conclude there is no single statement of the nature of either of these, given the same logic applied to the case of both and neither, given what we know, and that we cannot have the same kind of exclusion we ask for, for these statements given their dual nature, and their mutual division into separate parts, by application of the same logic. Instead, we find that neither is actually an open statement, and either is open, and both, is a logical contradiction.

This is a form of logical definiteness having to do with positivity with a

relation to waiting for the final determination of truth once all facts have been understood about these relationships between these core concepts. This proof illustrates that we can at the least, close the box on undecidability itself, and does yield logical soundness with regards to a proof. The weak point or the cliff here is when one goes back upon that which is proven as absoute and is skeptical of the previous proof where it was shown that we can only have a mutual negation of these two types of truth in any axiomatically mutually truthful and consistent system of logic, taking it to be a new instance of that which the proof proves or has proven.

This constant confusion is a difficult point, but after the proof of this is understood, it should be clear that there can be no such undecidability, that consistency would be at true risk if these statements existed, and logic is understood as projectively inward, in that it is never superficial, but once proven, by a larger and more comprehensive system of logic in disagreeing with a lower and more confined one, can prove in its infimum only the limit of the truths contained within this system, and as these are taken to be everlasting through time, a later proof can negate a previous one.

If we find that a system of logic would take the inclusion of a more comprehensive one for a proof, and yet must exist as closed upon a lower level, and without this requisite element of logical constructivism it would imply that the base system cannot hold such a truth to exist within this system. With this, the statement would have to exist outside itself, and a step beyond its foundation or its closure. This is in a direction which is empty for it, and therefore without a logical precedent. It would become eroded from underneath, leaving a statement which is excluded from both sides in existence, having to be outside the space to be upon it, and yet not existing outside of its realm, and therefore nowhere.

These statements are eternally empty and therefore do not hold true or provable, yet they exist within the language of mathematics as neither open, true, false, both, neither, nor empty. Logically unprovable becomes emptiness, and cannot be present if it were to exist on both sides of existence itself, and we hold these truths, that it is excluded from a definite existence when we have logical connectedness, and the statements as leading to one another. When we sacrifice undecidable to find emptiness, we come into a new realm, as a system of logic with the existence of open statements, and bidirectional logic. The

point to be made, is that a proof which relies upon its own base assumption in proving itself is circular, and that if we had circularity which we now see as a neccessity, the statement itself would not exist, as it would be circularly unprovable, and therefore unconcludable itself.

We finally with this truly understand that without a conclusion, its circularity collapses, leaving us with a state so excluded from logic, but existant as a concept, and one that is self negating. A self negating statement, does not exist within this logic, as it cannot be taken as a foundation or support, and is therefore not within our system of logic. We go with what else would be included, and this would require that this state of true and false or neither would be unprovable and that really then these types of statements are actually unprovable, and that if we examine this closer, we find that they cannot exist within a fully logically complete system as the two together actually imply nonexistence.

The proof of undecidability is based on a logically axiomatic system, but comes to the conclusion all of these contain undecidables, and yet from this, the proof would have to be circular and invalid, since the conclusion is in conflict with the beginning, as one part is negated in each end upon the other. Or, this proof would be noncircular, but also in conflict. Since it contains the supposition of there being an incomplete statement or an undecidable point, it can only be understood as requiring two mutually contradistinctory opposites.

These are that we can use an axiomatically existing system to prove that all axiomatically provable systems of logic contain the undecidable, or that it would rely upon this itself, in which case, it is not one such system, and it is either existant as false or nonexistant as true. Either way we take this, it must be falsity, since it is either both circular and contains a self suppporting falsity, or is non-circular, and creates a scenario with both and neither being each falsity, as they imply their states can be taken further, and when doing so, we find we have neither of both neither and both. There is no soundness, and we have only recourse to accept that its conclusions are false because of the logical consistency required for a larger system.

With this we find that it cannot come from between either, since it is about both, and we have few elements to work with. With only true and false we have one system, with empty we require open, and with all four we find a

return to logical states that support each other, when we do not take either or both to be logically valid states, and have these for what they are in a new logically consistent system, with these taken as erroneous. The distinction and the epitome of differentiation between these two types of logic is that which is either falsity or empty. The falsity is that it can be both or neither, and the unprovable makes this one statement simply an empty statement, which is unprovable and false in the sense of admitting these types of statements with both and neither of true and false as elements.

Undecidable propositions are those taken to be those which are true and false, or exclusively neither, but given we rely on a logical system to prove statements and we can logically prove that there is no pair of logical statements or single one being either of these, we can conclude there are no undecidable propositions in the larger logical system. We cannot rely upon exclusivity of these two from one another in juxtaposition since neither true nor false is empty or when true and false are not themselves exclusive in absolute form. This shows that we are not arguing semantics to reach this truth. But we must admit there is a slightly different element of nature to application of the words true and false and truth and falsity.

When we admit that truth is more comprehensive and absolute than true, when we have the clarification of open, we find an all new system of logic which is fully larger, with composition of terms. A valid statement is then taken to be a truth, and an invalid statement a falsity. The methodology behind this is that true and false statements are not all there is, but instead clarifiers on these logical states, that a statement can be true relative to another or false, except when finally taken to be absolute, and in between a statement can be false that it is true, or true that it is false, for instance. This is not to confuse things, because we need state and validity to have a logical conclusion of compositions of states.

Therefore, with both and neither of true and false we have mutual exclusion of two interdependent qualities by way of each other. In a system with this not holding true, there would be no not, given that the two new potentially exclusive quantities depend on two exclusive concepts on the one hand and not on the other, and together these two have no complimentarity in the fundamental nature of being provable, without exclusion of one unto the other, and they therefore violate the conditions of logical inclusion and exclusion, given the

nature of the forms of true and false in their absolute form as truth and validity and falsity and invalidity. We need this extra clarification to distinguish the absolutely true and false from undecidability.

Given no two such undecidable statements exist within a fully interconnected system of logic with the existence of truth and falsity and we have negation of true statements leading to falsity and given what we know about there existing no two, there would then be one. But there cannot be one, because this entitles the other into existence. We see when we slip into a subjective element of logic that there are new concepts besides only true and false, but that they are not if they are supported by logic the true and false and the true nor false. Only a statement analogous to this latter one can open our system of logic to the idea or the notion that there exists a new statement, unproven as of yet, and not neither nor both in advance. When we look at this undeciability from the other side, I believe we see that it is empty, both in existence and in its own validity, given the future tense we must sacrifice of never ending discernment to establish its truth. Such statements have no sound beginning or end.

This reduces our statements to a question that there is no logical end to such statements, and they are inconclusive, leading them to the true notion of emptiness, which is not both nor neither, but truely empty in the forward direction of logical state. There is another kind of statement in contradistinction to these two, wherein we have logical freedom in the future direction or sense of value or tense. These statements are in the direction of openness, and are not undecidable. Finally we see that these are incompatible with the notion of emptiness, but that if either is decided, one can implicate the other, in a logically sound architecture. Meaning if not empty, nor true nor false as of yet, this implicates open. To prove this system is completely logically sound we need to understand if only the empty, the open, and the true and false are logically exclusive and noncontradictory. These are as we will define them holding, of the character of always having decidability in structure and form, and exclusive once set.

What we have shown is that both and neither (true and false) as statements, are statements that implicate the others both or neither as existant. They also implicate falsity in the other when one truthfully exists. One implicating the other into existence gets us into a logically contradictory scenario, and logically nullifies each from existing separately or together within the realm of

that which is logically provable. Hence, neither of these can be given as true statements and both are either categories of empty, or definitively empty in and of themselves. We should say, both are logically unsupportable and empty, meaning, logic applies only to the negation of both from a sound and consistent logical or axiomatic system of discernment of truth. Questions from the other side appear empty.

Supporting Notions

Given a topology closed unto itself, a genus zero space, and one that is two dimensional, we find that the mathematics describing such a space from within this space is intinsically flat, in the sense of model propositions leading to each other in a purely deterministic, simplistic and algebraic fashion, just like the information contained on a page, in the sense of an algebraic equation. Although we can write a mathematical equation on a piece of paper, it exists independently of reality, but is not transcendental when algebraic, since it can be given and declared with logically understandable interrelationships that exist with operations such as plus, minus, division, multiplication and the square root and of a mathematical structure of inclusion and exclusion.

Without an interpretation, and as a purely symbolic equation, these go tangential to the surface in their expression. Just like this, the set of propositions does not lift off the page, literally, but instead work together in unison in such a fashion that they cannot be unrelated to one another, or left separately, but are also completely interdependent in a space described by lines, points, and regions. These do not exit the page, but instead are mutually compatible, invertible, and propositionally secure.

However, with a paper or a two dimensional equation there is no complete openness with respect to the future oriented set of determined propositions, either by themselves, or as individual meanings. There is no infinite piece of paper, and if there were, it would be essentially flat. Nevertheless we can write transcendental equations that have as solutions new numbers or members of their common structure of logic and even as interrelated statements, without a common solution pinned down as central or dependent on any one such proposition, or as many, individually nowhere, but always even in between and as

well one by one, in any sense we can even create a logical system generated by something as obscure as fractals.

We cannot it seems however, create an infinite or otherwise plain and strange symbolic system of logic which lies unto itself or others given together as these are logically unsupportable and in conflict with higher reason within the larger logical system. Given this statement, the road ends nowhere, when it comes to systems of logic built on a solid foundation.

These, propositions and symbols work on two levels, however with each sense of meaning on its own independent level. These are dependent on each other, for one does not exist without the other and we argue semantics to describe their natures when we divide them. If we examine the mathematical structure, and what separates it in one space from another, we find that there exist certain propositions that act independently of one another within the larger context or space. This is the space where we can examine truthfully even matters that pertain to separate logical systems. The other or older logical system relies upon many pretences, such as A is reductive from B, and B is reductive from A.

If we allow ourselves some openness and do not restrict ourselves to these two relationships alone, we find that these are not a direct bidirectional inference in general, although if both hold true there should be a line connecting them. Instead, we find that we may have two separate sets of interconnected logical statements, each leading to the other, but in different ways, not neccessarily each the other in reverse, nor dependent on the path taken to reach either of the other, nor a common conclusion, but instead as compatible and connected at the boundary by a potentially ever expanding openness.

These not reaching toward an end between, nor ends separately divided, or as ends of a single statement, or set of statements; as these produce an arrow to logic. How can true logic have an arrow? In many cases the arrow points both ways, but in others it appears to point only in one. However we can not proceed from truth to falsity and have a secure connection. It seems, unless we negate the meaning of truth contained in the original statement of truth. If we can proceed only from truth to truth, it seems that we are constrained by our system of logic, however, if all statements were of truth, we would never be constrained.

A system of logic however cannot be constrained as one dimensional, unless it is always purely reductive and a set of fully dependent statements, as then truth and falsity would not be defined, given they would come between each other, and one would negate the other or the rest. A one dimensional statement of truth, would be an infinite string of true and or false statements of the nature of each of which depends not necessarily on the others, but in fact ones which yield no mutual negation of any of them. Instead mutually existing statements of truth that do not lie about any of the other statements true or false conclusions would be required.

Taken in the context of all of these statements and considering such a statement to be the string itself, we cannot find a single closed string with this global property when also of a self referential nature such that it leads to a wholism of truth, when we consider it self contained. Does an infinitely long one dimensional system of truth possess no constraint in its ends as a given? This appears to be so, for the terminus gives it an end statement which reduces it with directionality when we have an end. From this a bisymmetric closure would be required which would yield a statement of direction as well, and we would have an end statement. It would no longer be infinite in this sense, and meaning would collapse somewhere along the line, as in, those statements about its infinite nature and of a self referential nature. Given this, we cannot have a truly infinite statement with an end. Truth and falsity. Meaning, every.

The question, or a question may be if any such statements of the nature of these one dimensional ones lead to one another. This is to build a system of logical statements out of these one dimensional statements. The only one dimensional statement would be one which contains no negation of true truth or falsity of one statement among a net set of these, among an entire such string. For this and for true and false to be defined as well, would require an infinitely long string. This is because the ends of an interval like line are defined, or must be, and cannot be with an infinitely long string, it must be infinitely long to be self referential. True and false, because these are not contained within one another, should each be provable as truthful and logical states.

There does not exist a lie, that tells both truth and falsity of a matter as it pertains to another. There does not exist a pair of statements two in number, each of which tells truth and falsity, each statement of which lies about the truth or falsity of the other, going in both directions between two logical statements.

Combined and as one statement, that there is no pair of these statements, as we can do with logical statements and existensial quantifiers, we immediately find that this statement must be true, given that its negation would imply that a truth is a falsity, or in reverse, and we would lose consistency.

True truth and true falsity are both true statements or states within logic, as are false truth and false falsity, given they are both definite declarations with logical soundness. These declarations are placed at the start because they are the words we use to indicate a logical quantifier in absolute form as true or false, empty, or open. And as necessarily a more general concept such as truth, as a truly general concept, and falsity as a genuinely and completely false statement. To avoid confusion, I suggest we depend on truth to indicate a statement with such a property of logically sound definiteness, and falsity to indicate something provable as not a truth.

True and false can then be taken to be independent statements with the first being one logically supportable as a statement holding without regard to anything else, as a truth, and false, as a statement logically shown to be in conflict with an absolutely true statement or inherently not true. These are both truthful statements because they have a logical state or tense that is defined and applies to the statement. Consequently we take true and false statements of truth to both exist, and avoid the pitfalls of having logical circles from true and false making each ill-defined.

The Circle

If we take many different and expansive statements as true, and false ones as well, we can recover their total union of meanings in the larger space, as one, but we never cross the boundary between these, so the question becomes, where are they in relation to the space? They are not in the space itself, but they exist, so they must exist outside of the space. If we take them to be in the space we do obtain a self embedding, but this space actually leads to some mixed confusion, as it relates to fundamental relationships that lead to this confusion. We must then simply take the nodes to have two properties, existence, and a symbol. These two together yield a dualistic aspect of points themselves. With many such statements together it is impossible to gather all of them.

As one statement alone, true and false, as both and neither, are empty in meaning. So as are true and false but in a space where these lead to in effect a form of a dual relationship and complement one another. The interesting aspect of this, and the question, is if all true and false only statements are in fact really effectively two dimensional. This should be representable by something simple and analogous to the two dimensional nature of a piece of paper. Simply draw two lines on a piece of paper, with one arrow pointing from a common origin in the direction of truth, and another pointing in the direction of false.

These are independent directions, however they are not separated, and there really is no origin, nor one dimensionality to their statements. These true or logical elements are zero dimensional, and yet have no common point or origin to them. They are not defined by the paper, or an individual origin of these statements. These statements do not have an origin, since there cannot be a central one, where they intersect together and become one and the same. Indeed the intersection is nowhere, between these two extremes, as they are simply directions.

We make many logical inferences based upon a simple assumption, which is that these statements follow directly from one another and without exclusivity with respect to other propositions. Here we have the implication that existence of a set of directions, the notion of an empty set, and a circle with an enclosed area, yield a uniqueness to truth in this space. I would not say that logic goes in a circle, except for those spaces in which it leads only to its own end, which it truely has none. However, the question becomes, if a system of completely true statements exists in one dimension again, and we find that such a string may exist, and there would potentially only be one such case given it is self referential. If there were only one there would actually be no such string, except for the redundant purely true and infinite string of all true statements.

We find that there may be many such strings, where we have a series of true and false statements. Such a string may conditionally require that truth and falsity exist with a compatibility condition on their mutual ends around the circle. Since such a string is infinite but exists without ends, it must be that such strings reduce to a set of entirely mutually contained strings of true and false nature around a connected circle, and we find that the aspects of the string or statements along its circumference that lead to one another, cannot contain falsity. This does require another dimension of description, and we cannot find

such a string with only its own description, except perhaps the circle itself, as a single statement. We now need only prove the truth of its existence.

A complete and describable string with both truth and falsity given our stringent requirements does not exist, because it would have to have true and false statements, and as one dimensional, requires that all such statements coexist, but all be true, of each other, and individually. With this, there can be no finite self closed string since there are no statements of this nature which exist openly to the larger system, unless there were only one such string, infinite in length, consisting entirely as a one dimensional string of pure truth.

This string can be self closed but only in a particular way, without exception to openness to the larger system. If this string exists, it would be the statement of truth itself, if there were only one. If there were only one such string, we would find that it would contain itself, and would be the essence of truth. However, again with only one such string, it would be self contained, and so could only be a circle of pure truth. If it were true, that there was a string of pure truth, we could have a completely true system in one dimension, but it would be an immeasureably long and true statement without end.

If it were true that there are no strings of a completely true nature, then we would have a completely false system. But, such systems would each be closed, with neither one open to the other, or they would have to coexist. This cannot be, as we have proven there is only one such statement in this process, as it pertains to the absolute truth of the existence of only one such string. We cannot have a completely false and closed string, because we cannot determine falsity in a system without any existant truth, and only a string of pure truth tells complete truth. Therefore, there does exist at least one such string of pure truth of this nature, and it is essentially a free and open string of pure truth.

If there were more than one, then it may simply be a rotated version of the original one, and as a consequence, we see that such partial strings are just pieces of such a string, given the existence of this one. Perhaps this is the string of all true propositions, and there definitely is only one of these. However, these work in a fashion such that they mutually reinforce. If there were another such string, however, it would not be negated by the first, yet is not provable by the first, so it is not excluded from existing, and does likely exist, since it cannot be contained in the first given this one's absolute nature, and we have ruled out

this case by the self contained yet uncontainable nature as being the one which is contained in itself.

Taking two duplicates of these circles to coexist, but not being the same, we find that we have an infinite set of openly truthful statements which pertain to the circle of each others truth. One implies absolute truth in the other, and they touch everywhere. If these could not coexist, then we would not have the completeness implied by there existing only one of each nature. From this, these circles are not mutually negating. Additionally if these were in conflict, we would find that one or the other of two same things, would negate in part the existence of the other, and neither could coexist, so we are now siding on the side of mutual coexistence. Joining these together, we find that they must be compatible, because together, although not requisite for the other, they would need to coexist as one object.

As one object, we need only show its existence. I believe that if there is only one complete and true string then it is freely orientable, and freely open to itself or another such circle, and therefore works to be completely open in application to itself, and in consideration of there being another. These circles of absolute truth are therefore not fixed, and move through each other in such a way that they are complete, compatible, and infinitely tileable, leading to openness with respect to all truths. These pass through each other seamlessly, saturate any given space of truth, and provide us with a solid foundation of completeness in one dimension with extent to larger spaces.

Given another is not provable by the first we find that another of a second variety cannot exist, and we really do only have one such type of string, however, it is freely associable with another of the same. We have now proven that one exists, and from this and the previous statements, shown that any number of these may coexist with other such copies to produce any higher dimensional complete truth.

So far, this is one dimensional, or an infinite set of zero dimensional instances. Zero dimensional instances of statements are foundationally unsupportable in the larger space by themselves when alone, but may be taken to be chance truthful statements nevertheless as they can be incorporated into a larger truthful logical structure, for which there exist forms of logic that relate on different levels. They are not really levels at all but an abstraction that leads

to many of the things we take logic to be. We may also have a two dimensional closed system with true and false in coexistence. As these logical statements exist independently of one another, and in one extreme where they each do so, in the other, they are all mutually reductive to some underlying statement.

However long they must be, these statements become one dimensional, and mutually support one another. They are infinitely long, but the statements of the system may be contained within the system itself. They cover the space, however they are not able to completely, when it is open. Therefore, the system collapses by way of itself since it is given as closed in each relation, and the relations are not complete. The structure collapses, since there can be no infinite strings without closure in such a space, unless we have a set of open circles in the plane, and without boundary, filling the entire plane. This would then imply a two dimensional system of pure truth, but these would be closed from further truth if they had the property of a boundary, true and false would be undefined in their absolute forms, and therefore it must be true that such systems are open over the space. This is the effect we get when we add another dimension to a space, it can be globally closed, like a ball, but locally open. We then have a purely two dimensional logical system of truth.

The interesting thing is that there must exist other systems of truth, existence for which is not provable by way of these spaces themselves, given that we have reduced these systems to flatness. This means there can be no projection out of these spaces, which holds for all of their theorems. We can however use the theorems that apply to these spaces upon these spaces, and potentially others. If we examine the concepts that exist for these spaces, there are inevitably theorems that even depend on decision processes that have to do with a closure of laws within the spaces themselves, that are self contained, and elusive.

These theorems may even depend on being proven in the space itself and dependent on a process of proving within this system or space. Such theorems are the most difficult, however they do always require logic from outside in the sense of understanding, so the space and its theorems can be understood in a comprehensive and complete manner. Such proofs if they existed and could not be proven in such a manner would be self closing, and therefore also circular but unprovable and nonexistant in the larger space.

Analogously to the proof for the plane and the sphere, with circles of entire

truth, we arrive at the postulate of there existing higher dimensional analogues of these spaces in which we have a system entirely consisting of truth. However these are difficult and are outside the realm of this paper. Nevertheless they must exist, given that logic is solid in the nature of having no such constraint without rules, upon a complete larger dimensional space, and at the baseline there is no absolute law and proof that is contained within logic itself, except perhaps the definition of truth itself, which is circular but complete, and cannot be drawn or represented in a non self contained way.

For this to be true, there would be a center or a terminus to the logical space, but one which it does not have. True and false therefore must be mutually defined in a dualistic way. If we examine this further, we find that it does not hold to be a center, because it would not be everywhere at the same time, and would defy its own self concept. It would not exist within the space itself, and there would be no truth for the space, undermining the attempt at defining the statement itself. This is a sticky situation, however we can see that we arrive at two truths that must mutually hold true for such a space, and one that works for systems either closed and finite or open and infinite. These must hold true in both cases for the systems to be considered conjoined. One of these truths is existence of truth, the other is truth of existence.

These are the conclusions of this section:

0.) An infinite string of truth exists and is not containable but is self contained.

1.) Any number of these circles of true statements may mutually coexist with others.

We have used a new form of negation besides if p then q, not q, then not p. This form of negation is best expressed as: if one of two statements is true then it implies the other exists, but since both do not coexist neither is true. This is if p then q, not p and q, therefore not p or q. We have also concluded that there is at most one universal and absolute string of true statements, but that these can be used together with copies, to saturate a larger space, and that they are contained in each other but are unique and individual, as an element of logic. These can be used together to fill a space, and exist with intersections of true statements, given they cannot deconstructively interfere but are mutually supporting. These counite with others of the same to fill a given logical space.

One Dimensional Systems

Empty statements are those provable as undecidable with the given statements, or unreachable by a logical path. If these statements constitute absolutes in their truth or falsity, then these empty statements truly do not pertain to logic, and are empty in the context of a logical system. One would like to ask if these empty elements represent places where the logical conclusions cannot be simply drawn, and if this allows any room for expansion of meaning, or a one dimensional string of the nature of true, false, empty, or open. With the logical system of three elements, we find that the truth table is not really complete, but always open.

The statements can be drawn from one to another, but were they one dimensional, then we would likely encounter a complete stop to the logical circle, because as these work together, they do not allow room to necessarily be drawn between the connections. A one dimensional line or curve drawn in such a way that it forms a knot of any kind requires a crossing of itself on a piece of paper. If we examine this, then we find that the separate circles of logic cannot be a pair of directions and independent, unless we encounter a crossing. If we do, then we must understand what occurs here. There are three states of such a connection.

As drawn, first there is one below the other, then the other below the first, then there are two at the same level. If these are at the same level, then we have a plurality of understandings, at each juncture, which if they are at the same height or depth, implies that they are in fact of a redundancy of three, while there are in fact also only two more level relationships. This division implies that we do need another piece of logic, however we can have also different kinds of interconnections. For the redundant three, we really have only one, and for the other two, we have really two. This makes three kinds of interconnections. True true, false false, and true false, which is empty. These come in different kinds.

There are in fact two kinds of the nature of true false, with respect to direction. From this, it seems that direction is actually accorded with logically identifiable relationships of direction between suppositions, while no direction, or a combination, in one dimension, is the condition of an empty statement. We lose the directionality when we do not have compatiblity of logical statements.

However true and false statements are connected in an abstract way. If we had a line on a surface, and the surface self intersected, we could have empty statements, but they would be only at the crossings, and would block the extension of logic from one part of the surface from one part to another, hence the only complete logical two dimensional settings or spaces are non self intersecting in their logical system, and are complete only without emptiness.

It is not true that the only relationships that exist are those which lead from one to the other of true and false, because in doing so, we would never be able to form a valid conclusion from one statement to the other context. Because the statements live somewhat independently, and if a system is self contained within its space of relationships themselves, then we find that we can have only these relationships as they work together. Indeed, at the point of division, we find that they lose their absolute direction, because the relationship goes in two directions at once, and yet the underlying system or space of expression truly is one dimensional.

The space is a foundation for the system of logic deducible from it. You can likely not draw with a single line, a non-algebraic declaration. Just like this, when we understand that the true expressions must connect, we find that we cannot have a lack of a sense of direction in a consistent formalism unless we allow emptiness. Without this emptiness we must find that we cannot arrive at a system that crosses itself arbitrarily but as curves that cross one another with statements of the nature of a mutual truth at the intersections. Since this statement is also bidirectional, we cannot have emptiness in a one dimensional system, since a logical conclusion cannot be drawn across such a statement. In the broader context of the complete statement we find that they must be in agreement at these points of crossing, and be a continuous series of true statements everywhere else. Can such a curve be drawn without containing an empty statement?

In one dimension we have a set of bidirectionally true statements, but the question becomes, where is that of a false nature? With bidirectionality to logic, we find that the emptiness as separating a logical line of thought in one dimension is explainable as a mutual condition upon the line, and explains why these one dimensional statements show such a restriction. Instead of this; in this place, we have truth, existant entire, but it is a complete truth going in a circle in two directions. Without truth going one way and false in the other,

since we find that the truth cannot go in two directions at once, we find that the bidirectional statements in one dimension indicate truth of statements in both directions, whether the statements be truly true or truly false, they are valid statements, and we have no emptiness, since the line so drawn would terminate, and it cannot terminate in emptiness since this requires that it cross with truth and falsity.

The directions hold for the perpendicular directions as well, and for the entire curve. Hence these mixed statements must always be compatible and true at the intersections and along the curve. Consequently we consider that it must be true that there is no center to the crossing of truth and falsity in a one dimensional system. We will find that a closed curve, the circle, exists as open in both the directions of the curve, and perpendicular to it, given its width is zero, and we have nothing to compare it to in this direction. It is infinitely dense as this pertains to logical statements along its measure or length. When we have violated bidirectionality we lose mutual truth and find the crossing statement logically empty.

Two Dimensions: The Plane and The Sphere

One asks if we have merely used the notion of a logical space existing on a topology, or if this is something more fundamental. To answer this question now, we must understand that one existence requires another in our theory, not associated with topology. For now, these have all been examples of the use of a logical system built upon or within a given topology. What we arrive at however is more fundamental, for we have a set of states and corresponding transformations of a global to local relationship of common association in each system, from the rules a system has to the number of elements we choose in a topology for different properties.

The plane, as a system, is complete in its method of logical inference and bidirectional. Given the sphere and plane are simply connected and such a system exists within these spaces of provable truth, and the articulation of meaning is different, this leads to confusion if one does not have a reliable way to understand the interconnections that are entailed by staying within the space and the relationship it has to the larger space. As well we need to understand

the logical inference needed to expand in meaning beyond this space, by way of one and the same type of extension, as from a space to a point outside.

If one extends too far, one arrives at an empty point, but it leads only to futher confusion, because as one gets back to the space, we find it cannot be incorporated into the larger whole. Acceptance of this point into the larger beginning space is only compatible, if it speaks truth to the rest of the given space, and reason of given incompleteness is not reason for extension or for feeling a faultering of meaning or something out of place within that larger space, but instead an opportunity to add something to a realm of understanding.

As we need for consistency, the lower dimensional lines of thought and systems that fit within a larger space need to be compatible fully with the larger space. From this we do not lose capability of new possibilities within the larger space. The existence of a system of pure truth existing within the plane, its simply connected nature, and the nature of there being a complete set of truthful statements with bidirectionality within the entire plane, filling it in all directions as an infinite two dimensional space, mean we cannot reason but with separateness, similitude, and completeness in both the true, false, the inclusive and the exclusive.

I would suppose that if truth or falsity were contained in the other, then they could be the same thing potentially, and this would be a problem. We would be able to violate many assumptions at will in such a system, where the boundary is not defined. The reduction to a single hypothesis or assumption may be flawed in many instances of logic, as it is too complex to articulate, or too simple to extract information from.

I believe that logic is safe for exploration. It is open territory and filled with adventures, never mindless. These logical aspects of reason itself, and the larger realm, probably indicate that there is a great deal, indeed, an infinite amount to be learned, and understood. And as we carefully do understand, the order of true statements incorporated into a logical structure, never really do seem to matter, so long as they all be truthful. These truthful statements should be all compatible within the closed system itself of logic if it is full and complete.

If logic were not this way, there would be one or two primary aspects of reason. If it were closed, it would be flat depending on as many logical states

as there are dimensions given a need for individual bidirectionality among each direction of true or false. If it were both closed and flat, it would be empty of further reason at an extremum of two flat types of boundary, the inside and outside meeting at this infinitely thin place. If entirely self contained it definitely contains a limit in the other dimension, and consequently it is devoid of further reason at a point beyond this space.

Therefore, it would not exist independently of a higher reason, since it cannot exist independently in the sense of a proof being entirely within the space itself, since it would not contain its own reasons for existence. This would be an example of an existing sphere of truth with a constraint imposed upon it existing self contained and there is a limit in the space of logical statements and its absolutes. We can identify the first with existence, but for a sphere of both true and false statements, we have a more tricky scenario, yet it is existing, given a compatible composition of such statements in a common space.

For a proof of these, consider a set of rational statements encircling from the north to the south pole. These would all be great circles and would be joined in truth or falsity, yet infinitely close to one another, and would all be ending in one, the ends being one of truth and the other of false, yet we would be able to tell them apart, given their orientation, and we would be left with a complete scenario of adjacent identical truths, given the conjugate circles around the sphere, in such a manner that these would be of the nature of all truth, and empty by way of their mutual reason.

We cannot cover the sphere in this manner, as we arise at statements that either, squeeze truth to a point at a pole, or create circles of lattitude that are pure falsity, if alternating in the longitudinal direction, or cross each other in ways without equal measure. There is no way with these arbitrary circles to cover the sphere with truth unless we have all truthful statements. We may use instead, infinitely small circles at every point in the space. Or ones around every point, of equal and small size.

They would not need to be anything but compatible and mutual in nature, but would be consistent of pure truth in one direction or the other, however not from north to south because of the antipodal point being a false statement and therefore of one condition. Given this, we cannot have great circles as going from truth to falsity in the space of the sphere, unless they are the composition

of all great circles of these truths, with the center of the sphere a common center, and with intersections all truthful statements.

The other type of covering that exists is to have sets of pure truth existant on the sphere, doing so by way of circles that encircle each point on the sphere, without a common intersection. These two types of covering are complementary and evocative of pure truth throughout the surface of the sphere, but of definitively different sizes. In that the first, with a common intersection of centers, and large, has two for every one point of the second in each circle where we have a common intersection of centers.

In a larger or more comprehensive system of logic, once we consider it being one to one with the space itself we find closure. In reality, the system of logic which is created by these larger realms of logic is open. As it applies to the sphere we have a closed space, and true and false, with existential arrows of directionality, give us four fundamental modes of logic in application, as they pertain to symbols, or the statements which hold between these elements.

With completeness and the continuity of these logical statements, these create a continuous and complete surface of logic, but only if we consider true statements to have an origin everywhere, and yet completely round in their interpretation with respect to one another. To describe these statements, they are like an infinity of small circles, adjacent to one another, not touching, but all one to one in their adjacency and yet never interfering, but instead with postulates passing through one another and compatible in their open union upon the space, or as counitive. With this we can define the surface as locally open and continuous.

This holds for the sphere and the plane differently, since these are self connected in different ways, however each is simply connected, and this only holds for these topologies, not the torus or the disc with a hole. It does not hold for the open disc, since it fragments when the system is considered as open, and there is no boundary of completeness, which allows it to meet the requisite requirements of the logical system so developed for this purpose of proving existence of a closed system of complete logic in the disc. However given that it is not closed, the open disc, can still be used to understand this theorem. It is merely actually true or false at the boundary, since there are no complete circles for the points at the edge, and we have actually terminus

statements at this edge. This shows that truth and falsity at their core are open in their fundamental nature, as it pertains to their inclusion within openness.

We can see that although many theorems are in practice not identifiable with existensial logic but are, on the level of theorems themselves. It holds as a logical recourse of this more general theorem that we can prove certain theorems given the structure of logic supportable in a two dimensional space. A question is if we can hold this for a system when confined to this space, when it is about the whole of the space in total. Since we cannot prove that an initial start exists, to any such system of logic, systems with open boundaries and a requisite of logical completion are not included, and so many spaces are ruled out, or face restrictions. Those spaces that are open are just as prone to this problem, since there is no projection of logic onto the space with an objective perspective. This takes a level of logic beyond the space, which gives a good illustration that the logic needed to solve a theorem in a space is not always contained within that space itself.

This also points to again, a larger realm of logic, and a new principle of logic, which should be considered the statement that if we have a statement that seemingly has no end, but a beginning, that we wish to determine the truth of, we must begin at that point, work from there through all relationships it has to all other aspects of relevant information, and find in a conclusive way the truth of that statement. This unfortunately seems neverending, and as a consequence we find that there is a great deal having to do with many relationships connected in such a way that they work together to create a complete whole reason.

This can only be simply explained as openness with respect to the ending of statements, and without a preexisting judgement of logical state unless we have all relevant information, in which case the statements are closed as a set that leads to this truth and it as a final statement about the whole of the understanding required to reach this truth. We will find this aspect of openness useful later, when we consider other topologies besides the plane or the sphere, and find there are systems fitting on the open disc.

One asks if we have merely used the notion of a logical space existing on a topology, or if this is something more fundamental. To answer this question now, we must understand that one existence requires another in our theory, not associated with topology. For now, these have all been examples of the

use of a logical system built upon or within a topology. What we arrive at however is more fundamental, for we have a set of states and corresponding transformations of a global to local relationship of common association in each system, from the rules a system has to the number of elements we choose in a topology. This is a new theory, one of rules for associated systems with a counity of commonly existing rules in both topology and logic for systems that have a one to one mapping from these rules to those in the other system in a complete manner.

Two Dimensions: The Torus

The torus has an interesting shape, but is abstractly simply a connected whole of two circles as a product space of these two leading to an entire smooth surface.

On the torus, we find something simple, that true and false statements coexist in this space, and that we have two directions for each of true and false within this space. We find that we also have the very definition of emptiness, as the essence of having both true and false as a common direction at the same time. Since direction, and position can be accorded with logic ultimately we find that the directions and positions must be both compatible with the system of logic we develop, and that both are in fact related on a dimensional level to the numbers of these in interrelationships. This means that there is a concept on the torus space of there being something called emptiness with incompatible or incomplete logical statements when brought together, and that the complete torus space of all true statements does not admit this possibility. This then constitutes a different and separately individuated space of reason from the curve, the circle, the plane, or the sphere when we consider the system of logic we can support when working entirely within this space.

On the torus, we have a space with a different topology. It is difficult and impossible to define the hole, however we can examine its essense, for which we find that the space has actually no absense, and the hole exists yet is truly outside the torus. Consequently it is not really a hole at all, but instead a void in the larger space. The torus and its topology are purely abstract compositions and do not exist in their true forms except in the mind. We can draw one, but is the hole a component of the torus, or is the space of what the surface contains,

the whole?

These are truely the same thing, and yet the surface is infinitely thin. As we examine this further we find that the torus is empty in two directions in its volumes, flat in the sense of being a surface, and yet must be curved within the larger space. The torus is as a consequence by first conception empty. The void that exists is in two places, and as a consequence, it really has no hole, but two voids separate and neither inside nor outside. This number of holes is in this case equal to the Euler characteristic, the number of 'holes' that the space contains, in the sense of a larger space. These holes go both ways, from the larger space to the torus, and from the torus to the larger space. These are however within the larger space.

In the larger space, where counting is key, we have a number that pertains to this larger space, and not the space only of that which is contained in the surface itself, or the abute space, the adjacent removal of the torus from the larger space. This number is not contained in the surface, and is beyond what these spaces adjoin or are adjacent to. I believe that given the nature of the space of a torus having a contained and a container, as well as a void, the absence of a number, and points for which we need not associate logic with direction, it is the first topology to be representative of the concept of number, in the complete space of these spaces when they are taken together, with others of a similar manner.

So what is provable on the torus as well? I would suggest that we examine the concept of coloring, and in the setting of searching for pure truth within this space. This is an interesting concept in and of itself. Recall that there are not only two directions, but that there are two mutually exclusive paths one can encircle a torus in. There are fundamentally seven types of state. We have empty, open, closed, true, false, and truth and falsity.

This is the number of colors on this topology in the graph coloring problem. This space is saturated by these individual states. Then, we have only four for the graph on a plane or a sphere, and this is also associated with the coloring theorem in its number of colors for a given topology. This does not seem meer coincidence, but instead is the net sum of types of symbolic association. We do not have void but this is it, if there is there to be any more.

It seems we now can definitively say that the coloring problem saturates

within the given space, and that its theorem is provable within this space, or in a higher one, looking upon this space, and even is the number of symbols unique to this space. We now have logic and topology now understood as existing on opposite sides of a common principle that runs through both. A space where topology does not exist, and results are logical, and a space where logic does not exist, and results are topological. This new resulting combination is a product of each, and is in the theory of groups, applied to each on a highly theoretical level.

This on a foundational level shows that there is it seems no common ring, or set of integers or counting process for the torus, and yet there is a common space. This space is beyond the numbers, yet is capable of containing them. In this gist we get that they work together to be part of a common piece with respect to one another, and meld together to produce a co-concept of two things in consensual union, a unique number and a topological space. These do not become however distorted, and we have orientability, which is necessary for the concept of order, which is necessary for the concept of determination of the truth.

In this concept we understand that orientability is accorded with the consistency of truth. This does not mean there is no truth in a nonorientable space, but that orientation preservation is the preservation of logical inference from multiple propositions to others. We have essentially systems without theorems as self contained, as closure would be a requisite, for those systems where we do not have orientation. This makes sense, given that the spaces with this property preserve interrelationship, which is clearly a primary requisite for determination of truth as a core concept.

With orientability, the implication is that we can find compatible statements in reverse of the logical arrow with false and true interchanged as we will find, and ultimately statements with individual quantifiers or in many cases reversed arrows of implication. With this (bidirectionality) we have statements true in reverse and only which need order preserved as a whole, or we have a set of logical statements that when in reverse may pertain to different sections and which are not purely about negation, but instead, with perhaps the logical settings reversed as well. We begin to then think about the placeholders and scenarios of each space together.

Logically speaking, three mutual truths do not lie to one another; but instead, among all truth tables, tell the truth as in a Venn diagram. This must work together backwards and forwards but how? Logical inference, logical fullness and logical completion as well as the built in bidirectionality of absolute statements are useful as concepts. As two below and two above, we have as labeled A and B at the top and C and D at the bottom, with A leading to C and D, C leading to A and B, B leading C and D, and D leading to A and B. This is the fundamental region in existence for a determination of interrelationship as only existant with at least three mutual truths.

Three mutual truths hold intersections of truth in all the fundamental intersections of such diagrams. These are a composite relationship that must preserve orientation when one is a consistently false statement or true statement, this sits in its general concept at the base of all logically consistent systems. For we need a third to have an independent interrelationship between concepts to have representation in such a space. We find this with three mutual truths for the given space and each can be found to be expressive in three forms of absolute truth, to be described later.

Examining the concept of one simple question, if there is a system of pure truth on the torus, we find that this is inconclusive. First let us find if we can saturate the space with true and false statements. We simply ask the non one dimensional question as to whether there exists a set of statements and logical interconnections or dependencies which is compatible and consistent within this space as a whole, filling the space. I would question that there is one given that without it there would be no theorems that pertain to the whole space. Additionally, we can show that the space must be complete, but we must start at a beginning. Let us begin with the postulate that we have two directions of true and false without origin, and that we have no separation but simply these. The space is two dimensional, however it is complete as one, and all we need prove is that a space can be entire in its logical system.

On the torus, starting with the torus as the base space, and considering there to be no origin and then considering the statement of strings upon this space, but existing within two dimensions we arrive at a series of true and false statements that extend across the space and also must be mutually instantiative, meaning each statement must be of truth with respect to the others. This means there must exist an infinity of true statements at every point with the

way these contain or express their individual truths and in relation to all other points within this space. This is a double infinity of statements of true or false as these work together and mutually reinforce one another. As they do so, they work to be supportive of one another. We can show this must be the case by negation. If there did not exist such a system we would either have one of two irreconcilable conclusions.

One, that there would exist at least one false statement among all the others, however then it would have no truthful interrelationship to any of the others, and the space would be incomplete. As such this scenario can not exist. Consequently, we must only determine if this truth extends to a torus with more than one of these false statements. However, as two points are separate with points in between no matter how close we place them, we easily find that there are those statements in between, and these also must tell the truth, consequently we find that the relationship is local for both points, and this immediately leads to the conclusion that these cases cannot occur, since we cannot logically conclude a relationship between the points outside these, and these points themselves.

As well, we find that zero dimensional points of reference such as this are incompatible with the larger structure of truth, given that they can be reached by the larger space of two dimensional reason with two paths, but they cannot reach out of their zero dimensional nature. Finally, there is no entire system of mutually negating falsity, since this negates the pretence for the space itself, given that we would have a space saturated, and it would be not only entirely false, but would be entirely mutually negating and thus a falsity. From this we can conclude that there exist systems of truth based upon the torus, which are devoid of falsity, and that falsity is in fact incompatible with this structure. Given the nature of fixed points on the topology of this space, if we had one point of absolute falsity and another of truth, which would be required for the topology, the rest would evaporate leaving only these two to collapse from existence. Hence falsity is incompatible with this structure.

Left to prove is that there exists an infinite number of systems of true and false statements upon these spaces. Given there exists one of entire truth, we have immediately that there exist others, if we can show that the implication of there existing one, implies the existence of another. Given the nature of counting and that we cannot count the number of points in these spaces, it

appears that there not only exists one entirely of truth, but ones of truth and falsity, as in this sense true and false statements together. Together we find that they are if they exist, not of the nature of the others.

We can have a simple example of a checkerboard like pattern in one instance, but we need a metric to define it. Without a metric we would need infinite strings or circles for every point and this would define an infinity of relationships, however these circles are not really there. From this we can find that they all would be implicative of the nature of there being a problem with a system with adjacent true and false statements no matter how contrived, given they would be true and false about their simplistic relationships to one another within the space of the torus.

We cannot, given the dimensionality of both the set of logical interconnections from a point to its neighbors, and the nature of the relationship depend on a system where we have anything but an infinite string of suppositions from this point to all others in its vicinity. Given this, every statement within such a space is of infinite length and expressive of the complete truth of the space, whether these be true or false statements. With this we can build such a space, but only if it is consistent. This seems a little far, considering dimensionality, but is possible for certain spaces with certain logical presuppositions.

The torus is consequently complete and consistent with an infinity of infinite length true and false statements, no matter its construction, so long as this space is consistent, it exists. How can these circles fit together, unless the circles points are actually of variable size? We need it seems a new category of truth, or a perpendicular string to this space, however we may not need this, if we take for example the circle as being infinitely small, touching and yet mutually consistent with each adjacent to one it touches. Only this circle is a string contained as a point. This notion of a point actually consisting of a small circle with in essence a perpendicular statement housed in a topological space as a setting for a proof system will be touched on later.

This existence implies an infinity of such spaces, given that the construction of the interrelationship yields an infinity of interrelationships within and between all points and their immediate neighbors and the whole of the plane. This new variety of points are then not all points but circles. It appears these are enough perhaps for the sphere or the plane, but not necessarily the torus or

a higher dimensional space. The points taken to be representative of only the statements themselves, and their relationship to others combined with the deductive process of reason indicate that the nature of truth and falsity is beyond these spaces, and not self contained in such spaces, since they are one to one with an evocation of relationship of infinite and complete statements. Figuring out how these fit together is clearly a very complex problem, however we have shown existence of at least one such space, the sphere with these circles at every point

Given the way in which we look for mutual relationships, we find that these must not be two statements adjacent to one another, one of truth and the other of falsity, unless we have a gradual intermediate transition. This only makes sense with an infinite string of such statements, and taken by way of content of true and false to be of a number, however, this is always rational, and incomplete. Perhaps with the circle we find completeness in the irrationals, and the adjoined numbers, the transcendentals. This would complete the space and if we could redefine the centers of each point as any intersection, the space would be saturated as real and complete as the real number system. However, we must have a very gradual process, and these gradations are one of application of truth and falsity, not end conclusions of each. We can imagine a truth density function as the sum of truth minus falsity over the sample size to get a notion of this.

This is a vague notion, however, it simply depends on the truth being mutual in the sense of statements, and of a lack of application of some truth to part of the rest, with total truth throughout, we can have these types of gradation, when we think about how these pieces intermeld and coevolve in particular, in a system where the truth gradually emerges and is not certain at first, but does so in accordance with previous truths.

Such as to see it is no absolute, but evolutionary of logic itself, and allows one to add new relations where none existed, a type of openness that lends itself to development without closure in the sense of incorporation rather than negation of previously understood ideas, but rational thought that evokes similitude in different branches, and encompasses the previous in new ways not foreseen. This leads to an open condition, where we have no absence of future truth negating the previous, something that would be possible if the truth were closed and fixed and contained a falsity. In this the truth of such a system is

not self negating, but continuous and self creating.

Consequently the entire truth or falsity does not pertain to the individual points taken as an ending of their statement but instead to their composition with others, taken as strings as one and one, each of an infinite truth without an end. These can only be circles of the same type as described earlier for the plane, and they fill the space. We have proven that we can have such circles of truth represented by points on the torus, but we need then only show the existence of one more kind to complete this picture.

This is the circle which encircles the hole. Is there anything special about this circle? It has no center, and surrounds no point. This circle is special, and there are two of them. Taking one of them, we find that this string can be entirely composed of truth. Consequently, the truth cannot be contained in a point, nor can a point contain the truth of a circle in the torus space, but a circle can and is complete in the logical sense and requisite for such paths, in as much as the space indicates logical precedent. This is consistent with the nature of the points not representing truth or falsity themselves, unless part of a circle, since this type of condition does not hold for every circle upon the torus, and the torus can be a complete space of truth, only with therefore, circles.

We find a fundamental difference between the sphere and the torus. While for every circle we can shrink it to a point, the condition of being simply connected, we find that this does not work on the torus, and there are circles that cannot, and for these circles the condition of having a point at their center is absent and the interesting thing we learn from this is that in the broader context circles do not all possess the property of free expansion to encompass part of the larger space, since it cannot hold for all of them. The circles which can represent truth, do not represent this truth in such a way as they may on the sphere.

The interesting thing about this is that while on the sphere, the circles can exist without points at their centers and not shrunk to points and still cover the space, but this does not hold for the torus where they must be shrunk to points. This is an interesting observation, however it offers little insight at this point, except that their points are in some sense characteristically different, given they exist in a different manner. This notion of points is however then compatible with the notion of simply connected or not, one hidden requirement

of a non-isoated point. Holding this condition of truth for every circle of truth upon the torus, we find that the space maps to itself in a variety of ways, but none is parametrizable by an everywhere perpendicular change in direction of the logical precept itself.

As a consequence the torus is somewhat invioable in its space of reason, and with clarity, we can see that it maps to a complete space where the real aspects of interrelationship and logical direction of reasoning are invisible. The logic manifested within this space is complete within its reasons and outcomes, yet it is not unparametrizable, but is transcendent.

Can we have an algebraic covering of this space with a truthful parametrization for all points within the space that is non-constant? This is an important question, even perhaps without an answer, but the question and its answer are not void. The natural parametrization of functions on the torus is in fact one that leads to non-algebraic functions. This is a general indication that if there did exist a form of logic dependent on functions and not binary or algebraic relationships there would exist instead a relationship between transcendental functions arriving at this form of logic on a torus.

The Spiral

On the plane, we have the same problem of no one dimensional covering, as the plane can be flattened, and it is essentially open in the sense of a connecting end, that is all points at infinity. This does still work, since with the plane, we also have an openness with respect to the starting path, without a hole, and the space is also infinite in this case with respect to openness with respect to the starting path. Given it is infinite in extent, it also possesses an open path with respect to the beginning, whereever it is. The path in being on a boundary with respect the whole topology would in fact never be able to be adjacent or near its actual beginning when it comes back past itself in such a manner so as to fill all space along itself completing a covering. As a consequence it would not be able to connect with itself or saturate the plane or an infinite two dimensional graph, and is not a complete covering. The continuity of the plane helps one to understand that the path has a beginning, however with complete continuity there cannot be an actual beginning or an end. The spiral never

really approaches the limit of being on the point of the beginning or end.

Instead, it cycles past itself an infinity of times before reaching an end, or a beginning, as we traverse this spiral. In doing so, it can be adjacent, because the metric has an open condition on all the points under question as these cover the space despite the thought that it must go perpendicular at the start or at the end to cover the space, which is not really true. Consequently, there is no changing with direction to it in practice with an infinite spiral. There is no void, since the curve can actually be as near as it likes to the other, without ever stopping. With no center, and every point subject to this condition, every such cycle is completely open in its beginning and end, as is the local topology of the space, and without limit.

This is a new and interesting notion, however it means that the two ends are not really there, the covering is in fact infinite, as one complete covering of the space without boundary at the start or at the end. It is completely smooth, and without retracing, and without divergence, although the space has curvature given the free nature of a one dimensional curve for a complete two dimensional space. With this we have a compact notion of the covering, without a break. We find that the spiral is incompatible in being a circle, since it would have to break at a point to cover the space in this manner.

Without this beginning or end, clearly, we need never end along the spiral. This covers the sphere or plane in its adjacency, but it has no end. The circle and the spiral cannot really be unified. With the spiral and the circle as the local relation of truth, one a path, the other its completeness, these must make the space completely solid, and yet there is no tangency of the two. These two saturate the space from start to end, and we cannot take the spiral as a circle, since it has two ends, but the spiral can still express a string of infinite truth, although its string is different.

This is in that its beginning and end are not arbitrary but unreachable, just as infinity is, in its nature. This is strange, for it presents a new object that is infinite in length, but it must have a difference besides the disconnected start and end. We know it is already compatible with a circle of true expressions, but that it is different, because it has no circular nature but is of a motion upon a sphere, going from one place to another, but never returning to the start. It is a truly existing curve that never retraces its path.

This logical system in terms of associated directions is perpendicular, in the sense of all the adjacent points of a true false nature being perpendicular, and not only along the line. These basically have a higher condition upon each, having to do with the association of direction with true and false and emptiness perpendicular to one another, upon these two spaces. These two curves are then associated with two completely perpendicular types of setting for logic. If we examine this further, we find that they are simply complementary objects. One, a string of infinite length without beginning or end, and empty in the ends, a spiral. The other, a string of infinite length without beginning or end, and empty in the perpendicular directions, a circle. The interesting thing about this is the spiral is essentially closed to the sides when brought together, and open in the ends.

With the circle, it is actually open around the circle and to the sides, yet it has no width as without being containable in this direction, given its infinitesimal width. The circle is however closed in its completeness, while the spiral is incomplete. The two together would give an interesting system if we treated the points along one as those of the other. These as a product space, are complimentary covers, but they don't match up. If we consider them however, we can prove things of each about the other. For instance, the points, as these circles illustrate, and as the end of a spiral, can never be reached when we use these as the points and consider the beginning and end of this path.

The points of the circle, being as spirals, are not a possible arrangement, as this would indicate that they are incompatible given they do not have the start and end associated, when hypothesized to be a point. There is no completeness in that the net statements do not pertain to all statements of the circle. There is no mutual condition of closure in the sense of self connection. We can have a self closing spiral on the torus, and it is a vivid representation of a space as covered by a spiral, which is capable of returning to its beginning on this space, and covering the torus. This object indicates that the torus can be covered by a single curve, in great distinction to a sphere, which cannot.

This covering by open circles always with a point in their centers do not work with the torus in general, because the torus possesses a circle, for which it does not hold that there is a point in between. These circles work, because they overlap somewhat, different from points, and they have a notion of completeness given by the nature of strings of universal truth, whether they be true or false,

they exist as elements of this space, and are not capable of being elements of falsity, as well as not being without a union, or adjacency of overlap. Meaning, these postulates are near enough to be considered touching even when they are infinitely small, in distinction to points.

Instead of what we get with a disc or a sphere, we find that the point at the center is disconnected entirely given the existence of a hole, and as it has this property, we find that it cannot hold for all circles that they surround a point or other of a truth contained in the same space. Instead, we have a void or a hole, hence the description of a torus as being a surface or a manifold with a hole, although it really has two. This indicates that since surrounding a point does not hold for all circles on a torus, this cannot be a condition for these universal truths, and indicate it is not simply connected. This symmetry also implies that arbitrary paths on the torus do not hold, and another covering is a series of infinitely small circles, as we see on the sphere.

New Topological Points

Running with this concept of the point actually being a small circle, we find the point in two dimensional space is a small circle, something we call a 'epsi', and we quickly see that the same concept of a small circle in place of a point can be generalized for larger dimensional spaces. The 'point' in three dimensional space is isotropic without a center in its representation. It is a product of two circles. Their composition matters. The corresponding point for the four dimensional space, is separated from its limiting point, at the center.

We have several requirements of these points for their replacement of the usual points. The first is that they possess no center and instead, have isotropy when shrunk. They need additionally have the same limit as an ordinary point. And finally, that they exist in such a way that larger scale objects can be drawn through these points across the space, without running into a snag or a hole it cannot be moved past. One condition we hold for these epsi is that they scale equally in the circles upon the small space they cover which can be used to cover the entire space. These topological points scale with the space, and are always one dimension smaller than the space they cover.

They need one less than an equal number of dimensions to that of the

space they cover, and a measure one size smaller. I have termed them 'epsi', as any number larger than one of one variety or for the singular or the general types of these 'points'. This may seem confusing, but as they recreate their own structure when duplicated and combined, the confusion is natural. We also need isotropy of directionality in relation to the larger space and then we can have a uniform gradation of the space into epsi. These are also so termed because they are in fact epsilon sized circles, or infinitely small topological points possessing the general symmetry of a circle, with the same fundamental properties as points except non zero dimensional and equal in measure in each dimension, with an isotropic symmetry and in relation to the space they cover.

The following are the prerequisites for an 'epsi' in this new setting and system.

1.) Isotropic symmetry.

2.) Reduces to a point in the limit of its scale going to zero.

3.) An inside and outside, with a common limit of point with the scale going to zero.

4.) One dimension and one measure lower than the space to be covered.

5.) A homogeneous product of circles in three dimensions and higher.

Property of Point	0D	1D	2D	3D	4D
Dimension	DNE	0D	1D	2D	3D
Object	DNE	Point	Circle	Circle-Circle	Circle-Sphere
Enclosed Point	DNE	None	One	One	One
Analogous To	DNE	Point	Circle	Sphere	Circle-Sphere
In Completion	Point	Circle	Surface	3-Volume	4-Volume

DNE = Does Not Exist.

For the three ball we need a different kind of object analogous to a point. If we used circles for all of these objects instead of one with isotropy, in a three dimensional space we would have no preservation of the axioms and no ability to cover the space without a local preference for direction. There would be no isotropy with respect to the larger space in motions upon it, and for this we require an object free of directionality in the sense of composition with others.

The circle is of one dimension less than the surface and works for this surface, however not for a three ball or a hypertorus. The circles are flat, and cannot be turned in all directions with respect to each other in such a way that

they meet up with other objects of the same kind in a way that fills the space freely and completely with the global condition of isotropy, unless we choose all great circles through all points with a common center on a sphere for the three dimensional volume. This is how a two dimensional epsi is formed.

In general if we examine how these interoperate, and their dimensionality, it is one less than the space it fills and the measure is one magnitude smaller. We must maintain bidirectionality with respect to the surface generated by these itself with relation to these in the touching of two of these for the larger dimensional spaces. This is logically necessary to get the epsi to work together on a higher level of dimensionality whereupon we have mutual relations between these objects in a space. If we can show this is further compatible with the notion of an epsi as a point and it is connected between the spaces then we have a space and topology compatible with the notion of operating with these new objects in place of points.

The four dimensional version of this must be three dimensional, and it must have no holes. This object is like a solid sphere, like in the case of three dimensions but with only local circles upon the sphere, and a small circle in the radial direction to make it a solid, displaced from zero. This sphere is a series of small circles, one at each point, infinitely small. The sphere, and the circles are the same size in the limit of the size going to zero. The three dimensional version of these 'points' are small spheres with only a two dimensional set of circles covering the sphere, and shrinking to infinitesimal size as the sphere does. This is volumetrically open, analogous to the circle in the plane, although in a different number of dimensions.

You should not be able to tell when you are inside or outside a point because it has no inside, and although these concepts exist in four dimensional space with a three dimensionally embedded surface such as a sphere, they do not belong to a point. This is why the epsi need to be shrunk to their infinitesimal limit to function as intended. This does not appear to work for the three dimensional variety because we do not shrink all of the elements constituting the volume at the same time.

Consequently, since one element is left without shrinking, we do not have an isotropic scaling of the elements constituting the epsi and an actual solid volume or a surface containing one for a volume or three ball. It cannot possess

the properties of isotropy necessary for the interpretation of being a point. Can one put together these epsi in such a manner that they constitute a three dimensional space without center while preserving isotropy with respect to the common shrinking of all these elements together in such a way that they have the properties of a point in the limit of the size going to zero? This can happen when the in and out dimension is open.

Logically independent statements are those for which we have a maximum and absolute essence of openness with two unrecognized statements, or statements as circles or part thereof which can pass through each other seamlessly and are mutually compatible, this is the true essence of counity.

Higher Dimensions: The Three Ball and The Four Ball

Only topological objects constructed with lower level topological points, can be used as higher level ones, and must be made compatible with the motions these objects may possess in the larger space, and must be compatible with all absolute notions of the higher dimensional space, on a topological level. There is a nuance to the sphere constructed in this way and the normal sphere constructed with points. It appears the former has no fixed points. Without points, it cannot really have fixed points, but it must conserve the topological character of a mapping or flow upon this space. This is confusing, because without fixed points it doesn't appear to satisfy the conditions for being of the topology of a sphere. I do not think this can be compensated for, except by a sphere of these circles in a three dimensional space.

Here it would by its embedding possess a curvature, which would compensate for two rotations around the space, and both fixed points, yielding a point in a space of the right composition to affect the higher dimensionality, be isotropic, and possess the other usual properties of a point within this space. It could possess two fixed points because its Euler characteristic is still zero but its topology is without a mapping at the base level. The base rotation or net curvature is an absolute measure in an isotropic space. I believe we find that with the flow going to zero and the circles taking up the aspect of a number for each point and the continuity of the space admit the notion that it can exist without fixed points, for something as simple as a space where the curvature

and the fixed points compensate for one another.

The rules are prone to an embedding, because a solid three dimensional space with two dimensional spheres within it has these spheres as encompassing volumes. Although the volumes go to zero in size, we still have the notion of a volume dimensionally speaking. The individual elements of the common construct cover the space freely and intercompatibly in such a way that they do so without loss of spatial filling and also completely fill the space with isotropy. The interesting thing about these larger dimensional epsi, which can be considered in a higher dimensional space is that the objects composed of them may freely move through the space. These points are put together in such a way that they can saturate the boundary with an open condition, as we move through the space, a circle can be drawn across or through them without distorting their topology and without encountering a hole in a solid space. We could place a hole at the interior of a space, which would now be the interior connection that exists, and we would have openness or a closed boundary at these, with the normal part of the space as filled with epsi without size. A larger dimensional space would require an extension of this construction.

The point in three dimensional space is isotropic without a center in its representation. It is a product of two circles and their composition matters. We must have these on a two dimensional surface. These do not shrink smaller than the sphere, but encompass it in great circles, with only a center as common and inside it. This is so that the contained point is always at the center of the covering circles. These all have a common center for the sphere, unlike the plane. The object is a closed sphere, and it is isotropic, in the surface and the circles. The four dimensional epsi is a product of this spherical space, composed of circles of which usually exist in two dimensions and another in the radial direction.

This circle being open, creates a volumetric point, of three dimensions, open on the inside and outside. It has a vanishing center, and its limit is again that of a point. It has at first sight a thickness, but it is more, for if it connects to a circle, which is off the center, we find a new notion of what a point means in four dimensions and the space is open on the outside and open in the center. This ball is with vanishing existence at the inside and outside limit and thus is fairly open, as the others are. The analysis of these should produce new and interesting varities of topology. For instance, one has a genus of effectively 1/2

and an Euler characteristic of 1. This topology is an exponential in measure for the points as we approach the plane, with two connected, and with the circles of this topology at all points in space, and an exponential increase in their effective sizes.

Given the condition that we need to be able to move a surface through such a space of these epsi without them changing the surface, these objects can have no points at the center, but then the center must be one of these circle covered spheres. We cannot have a point at the center and we cannot have a closed circle group for the covering of the space since it is incompatible with the space being isotropic in the notion of point and given the solid sphere's finite width in that a point at the center would not be able to shrink, and it would have a space in between it and the edge and a condition of closure in the sense of a definite inside and outside.

Only such a new object containing an element of hyperbolicity and in essence open in one dimension will suffice, without a definite center. Although this requires an entirely new notion of point, and is compatible with an infinitesimal size only if the new dimension is itself infinite in extent, and not finite, but open. We have shown that these circles function on a surface, and that they together can be used to construct a surface analogous to a sphere such that they are capable of filling a three dimensional volume such that they possess the same properties. An open volume, without a present center or outside boundary would be asymptotic to the object needed for this space. Topologically speaking it does not have a point inside or an outside, and possesses one of these open circles in the radial direction, and two others in the other angular directions, such that it is filled, in an analogous manner.

The circles should not be broken, but are open by being circles displaced from the origin, without a radial dimension to these circles, with infinite thinness, and shrunk radially as a sphere, by the same proportion. The measure for this space is $8\pi^2$. These do not actually approach a limit on the inside or outside, are hollow on the inside and outside, have no inside or outside, and are completely abstract yet function as objects for the filling of four dimensional space. They are open in all three measures. This openness in the third direction means that four dimensional space itself has no inside or outside, and we find that we find a common condition met for the space filled and the covering object in this dimensionality, whereas in three dimensions we still have an inside and

an outside to a boundary created by an object analogous to the covering object of one dimension lower. In two dimensions, we have a further restriction, in that we cannot form a boundary from these objects where we have an inside and an outside, and the boundary is open. And then in one dimension, we cannot even have openness, and the substituent particles are points, the conventional ones, of zero dimension.

I would wonder why the pattern would hold for even and odd dimensionalities. These laws seem to correspond to the behavior of differential equations on these spaces, and they are analogous to this because we reduce in dimensionality of space with space scaling when we have a derivative. This is the behavior of differential forms. It would be interesting if the form of logic would be related to the properties of differential forms on these spaces. Similar rules do still hold true, and there is a relatedness of these different types of dynamic behavior to one another.

This is interesting because it is a new type of mathematical resembelence, but more than this, the differential forms or topological points behave as these operators in the given space, with an integral one analogous to a section of this space made up by these points. This is not just a dictionary of relationships but the structure of how these interrelate in the given space, and how the interoperations lead to physical relationships within a space, as for example a solution set. They are one measure and one dimension lower than that space they cover. This holds special properties, and we find their measure and their dimension in agreement as one lower than the parent space. With this they may be considered topological points.

By abstraction further we can determine that the different lines of logic can work in a space of four circles, with one potentially always open, since the other three, as a closed threefold truthful statement remain continuously closed, as they are mutually bound, by the interconnections between them. To reach an entirety of false conclusions by these is not possible in the whole space, so the space in between opens them up to openness in the larger four dimensional realm of logic, coming from this product space. The different levels of inclusion actually lead to completeness with openness in this larger space, but the true and false based system is no longer limited by emptiness. I would say that this space naturally possesses an open condition on its truthful suppositions in four dimensions of a logical system.

The rule based system, when going beyond the three types of statement of true, false, open, and empty, the inclusion of a zero, a one, and an infinity, lead one to the conclusion that there is no boundary to the system of truths in a four dimensional space. This appears to be a global property, as for example trivial solutions are equivalent to one point of truth at a minimum, usually zero. And also, true systems as instantiated as physical objects or forms within this space. A minimal tranformation yields the mathematical version of a Poincare section of differential actions in such a space, if we were modeling a differential equation.

And deeper yet is the mathematical result of having a model with logical rules corresponding to a differential equation in its solution space, and representative as a geometric object similar to that of an inverted lattice, for the actual discrete logical values and locations as dictated by the process of logic involved as a grid of truthful or false logical values, given the transformation of the group, asked by simple questions of a differential or divisional nature. Finally, consider the action of a nonlinear differential equation on the given space. These are simply interpreted with corresponding differential forms like a line, region, or volume in action under such a differential equation.

The rules of group theory create an interesting pattern, and we find the group theory aspect intact as well. These provide an interesting setting, not just of interpretation, but of actual physical forms of rules, each with unique signatures and constraints given the nature of the differential space, or logical rule set to be solved, but with relationships given in terms of solid points, which can relate the boundaries of a topological space to the ending of a variables limiting motion. This finds utility when we consider variable sized topological points with the forms of fluid dynamics and chaos, and other nonlinear equations (for which we give an example later).

The prime numbers we will learn are create an endless circle, by a motion around no arbitrary circle but one given by the pattern up to that number currently, and filling in irrational points with an ever expanding set of logic in multiple forms of varying size and endlessly around a common logical circle related to this point in the logical decision tree, as other irrational and natural numbers. From this we get the idea of a random filling, and can trace the development of an irrational number in a unique way as the points appear as digits around a common circle, and as it logarithmically approaches a limiting

number.

This is an interesting aspect of the prime numbers unique to their development as a series approaching infinity. Because of the logarithmic falloff of percentage prime, and the size out of that prime in percentage, to equip us with a function never linear in size and therefore convergent. If this does in fact hold a pattern or a definite convergence, this number must have special properties.

Logical Completion

Many kinds of statements from within a space to outside a space are unreachable potentially from one another. They do not however exist with a common barrier to reachability as single statements. With only four logical outcomes from two and two inputs we find the logic of this system closed. This explains why the sphere and plane exist with a closed set of axioms. Because of the completeness it also acts to illustrate that in a closed system we cannot completely have logically independent statements. This is consistent with closure in such a system.

In a more general larger system, we have a more comprehensive set of logical statements. These each exist as a new type of openness with respect to the future tense axioms and their outcomes. As these work together they act as a neverending and opening axiomatic system. These are the outcomes for TT, FF, TF, and FT for two and two. With this application we can see that the logical statements can hold in a way such that they do not interfere but coexist as True and False independently.

The essence of this freedom is that the statements in a to-from relationship can independently relate to one another as a statement that is true in relation to one statement, and false in relation to another for all different compositions of statements. In this true and false, are not absolute statements but instead statements with a relational aspect open to both true and false for any single statement in its relation to others. With this, the two are now somewhat subjective, yet this is possible, and one could define a density function for a probability set or on a boundary of a region.

Additionally, when we have a system like this, we can have a statement

that is seen as completely one or the other, unless it be an absolute truth or falsity. This is in comparison to all other true/false statements. We learn that an absolute truth, cannot be open in this sense to true and false, when they are absolutes, unless we have a new kind of space in which these serve as limit sequences, convergent to a point. If we define by a sequence a probe on the space in the vicinity, and certain limit sequences these may not converge as others do, and as we get in a fractal or other solid sequence there are indications of emptiness.

Sometimes mathematical emptiness in the reverse, is abstractable from a set of inclusion and exclusion processes, open and pertaining to all of time, when we must draw upon the past and the future, within the present. Combining the notion of emptiness and logical state, we see that when a connection does not exist, there is actually a zero between the sets. This means a connection between them does not exist. We do not get an exclusion but for the way that these are truly in separated positions, and there is no conflict between their true and false sets, each being adjacent to the other and having a notion of emptiness with no connection between them.

These absolute statements do not seem to fit into a traditional logical system, but, they are important and paramount to a fundamental system of logic. As they exist, we may make up a table for them. Here is a table with the new introduction of emptiness as zero, in being the product of true and false statements, via mutual relationships to such things with these logical statii or tenses:

Empty?	0	Truth	Falsity
0	0	0	0
Truth	0	False	True
Falsity	0	True	False

Composition	0	Truth	Falsity
0	0	0	0
True	0	True	False
False	0	False	True

We could have said earlier True Falsity for a Falsity, False Truth for a Falsity, True Truth for a Truth, and False Falsity for a Truth, with a clarification bringing these to absolute status.

Does a string of False statements exist? Not if we take true and false as absolutes. One would argue about which is more absolute, true or truth, but this is subjective of the word, and less definite, so it is not as useful as using both as conceptually similar but very different words, one implying the absolute,

which I have used for truth or falsity, and the other the relative, as true or false. This false statement is given as the logical negation of the entire set of statements in the true string, and given as backwards within each implication. This however does not negate the sense of the string. It is basically an exchange of true for false with the notion that the word alone has not changed, but all implications are new with a not. Such a transformation can be accomplished by having: T switched with F and in all statements and subconstituent parts of all statements, with the arrow of logic reversed.

Try $T \rightarrow F$ switched to $F \leftarrow T$ to get an idea of what this looks like. These appear like mirror images of one another. To not get confused, this is not merely a symbolic substitution. Instead, this is the other sting of truth, with the inverse for all statements, when we reverse also the logical implications in their end state, and in all their statements. This string also accords with the nature of truth, and implies a consistent logical dual to the first string of absolute truth in the form of a circle. Zero, is that which is in-between, but is not represented in this string. Empty would be another side. Perhaps the circular string is the same string as this one, with one such substitution. Finally, if one string is open, the other may be closed. With T exchanged with F, we find that T implying T, and F implying F are both preserved, and we have another absolute string since these are preserved, even with the nature of Falsity in subsitution for Truth. There are then two absolute strings. However, we must empty all relational statements, so that a new string in pertaining to the whole string allows us a new string, with a statement pertaining to all statements in the string of the nature of false. If this is so, it must be that we have a new string of truth.

A statement applying to the whole string and itself, with an implication each are false by the other, is the essence of a true paradox. Yet in this system we can gain in understanding, in that of finding this string as a form of the nature of F applying to another, twice over. We find the statement as simple as: "A negates B, B negates A". There is no realization that leads to a reconciliation of these two implications. For them to simultaneously hold true, is not possible, as neither is both simultaneously holding false. With this, these truly are empty statements, but they need not be seen as unprovably this. Outside of this realm of paradox, we encounter more nuances of interest. This reversal is fundamentally different with $T \rightarrow T$ and $F \rightarrow F$ with $F \leftrightarrow T$, since all

references in the string are reversed. We find from this that the statement of this string has a definite correspondence to other strings. For this, the element of the previous string which has self reference cannot exist (it is self negating). But, the strings can refer in true/false strings to other parts of the string without referring to their own validity. Consequently we find, without truth, a completely false string with self reference would be empty by neccessity, unless these are considered as truthfully false statements. With this we could have such an additional circular string, as it applies to symmetric relationships having to do with a truth value given their net expression.

As there can be only one reversed string for each of the normal sensed ones, and this would be one for all true, there may be a string of false expressions. But we must have a reversed sense and all true one which is the reverse of this. As we apply rules from these spaces, and apply inclusive and exclusive boundaries we find that the different levels intermix and become applied in tandem and in this way only for connected sets of one dimensional statements between two sides of a space, and in each indication of one to the other as bidirectional. This is the aspect that both admits and negates paradox.

This entirely false string exists without self reference and refers to other statements of the string exclusively. This property of reversal with interchanging natures is fundamental to logic, and admits or allows one the possibility of identifying one of two symmetrical such states leading to paradox, when one exists because the other does, by this symmetry of logic, and each implies falsity in the other. This explains the pseudo existence of paradox, when solitary statements are enough to indicate the presence of duals of a nature excluding a truth. When this is the case we may follow the if A then B, if B then A, not A and B, therefore A a falsity, B a falsity. These are the essence of paradoxes. With this, truly empty statements may be paradoxes. Only really in this sense do paradoxes exist.

For the statements of the string to have no end, we find their strings of statements referring to the other open strings within the larger string. This larger string is many other statements. If we apply strings to others, and we reverse $T \leftrightarrow F$ then this may only make these strings work if we have, only one false string. We can also, reverse true and false, and the reference of the two strings within a string, and also without self reference, to have a new string of absolute truth, which is the reverse, although not semantically the same as the

complete reverse. When we reverse these, it is however equivalent to a purely symbolic interchange of these two, and this interchange with sameness can be attributed to the absolute sense of symbol, which is beyond the statements, and independent of them. True and false like left and right come out backwards, but individually do not lose their meaning when interchanged.

Since this string is open for the all truth one, there can be no completely self referencing in every statement of a truthful string, for it is not contained within itself, and it cannot be contained. What we are really looking for is a surjective onto mapping of the statements, and a new fundamental question, do these hold reversed in time. I believe that logic only pertains when we also reverse the direction of time simultaneously with this. Time may then be considered perhaps the ultimate paradox when we consider time to not pertain to logic, that this is a property of logic, and with time as being the direction and yet missing from logic. We must change something about time and logic, to have them fall in line with each other, with this property of the same logic working backwards in time and yet a needed inversion with time and a change in direction of time. Given that the direction must change with inversion of logic there is an association of time to logic and with logic working both directions in time one, now absent. This simultaneous presence and absence is the true mystery.

Also, this is not the same as circular reasoning. If we had a self referencing string, then it would depend on a point referring to the whole string from one. This would give it a center, and it would have a reference outside the string. Consequently it would not be contained as a solitary whole. All rules and statements, as well as conclusions; if self contained in such a string would not be compatible with a point referring to the whole of the circle. Consequently neither the complete truthful nor the reversed string of absolute truth can be said to be entire in their self referential nature, or holding from one to all points. Since this self reference for the whole string is non-existant with a string of all truth but with false statements when reference matters, we find from this that the reversal in order in true and false yields a new 'false' string as merely a duplicate string in reverse with $T \leftrightarrow F$, and is open as well. Since there is no centerpoint, both strings have no connection at a point of mutual intersection.

This means the order of logic on a complete scale, with references to itself, yet a logical symbolism with directionality as well, is T/F reversible, without

a center, and logicaly holds in both directions. This reversiblity of truth and falsity is related to the bidirectionality of logic. For example with the order reversed. Both are infinite, equally valid, and operate forwards and backwards; this is the implication that logic is open in the forward and backward direction, and that logical negations exist as an asymmetric operation on absolute truth and in the order of statements. This is a new logical operation.

Empty in its purest form is the absence of a thing within a container. In the context of logical systems we find that here, it is statements to which logic does not apply as a conclusive means to find a connection. As it appears, we can justify the separation of logic into different categories that statements represent truth for, by giving two dependent pertaining attributes and two statements when brought together, as of the states of their composition together. Here is another table illustrating these properties, used to reconcile these different qualities pertaining to objects in a division or category, when all we have are the most basic and essential distinguishing characteristics, for the categories of objects we define as related to the different properties these objects possess in mutual comparison.

	exclusive	incorporative
both open or both closed	empty	full
one open one closed	null	void

This shows that there can be a sense of position or location to logical statements. These are in a location in juxtaposition such that we can now define a relationship between the theorems or statements, and that they have an extra quality of relational existence which goes beyond the individual statements, and is about their relationship in this abstract space of logic. These qualities now in some sense reduce to: 'is deducible from' in many cases, but are about 'reachability' and 'exclusivity' of true/false statements in the end. We also have the identity.

Logically open statements independent of future determination are absolutes, but they are on the outside of the givens. This is a new category of statements. The other categories I have come up with are:

0.) Logically independent statements.

1.) "" open statements, to future, past or present.

2.) "" empty statements, where the logical system has a terminus.

3.) "" relational statements, with both T and F as to different other statements.

4.) "" complete statements, with T and F as absolutes in relation to all other statements.

These are seven different kinds in total. The implication of the two circles together, one true, the other false but both of complete truth, are mutual or conjugate opposites. One is the reverse of the other, however they have no intersection or overlap, and imply that true and false have no intersection, as neither has a centerpoint, both together do not either, and although one is near to the reverse of the other, they together do not share an overlapping point as a center, and thus they have no fully mutual implication or total alignment in absolute form.

One could say they have no beginning or end. The aspects of logic this instantiates are that of independent truth and falsity of a statement with respect to others. And secondly an aspect of logic which is open to the logical state of future statements, or new givens of past statements. A false falsity is not a new truth.

This fifth postulate of logic is an open and unbiased treatment of new or old statements, without their inclusion as absolutes until each other truth or falsity is examined. As they are non-absolutes they exist in a space where they may be considered open as to an assessment of their truth until they are determined, and also there is the other side of this, that one may hold as to another, always in a way, not changing the logical state of this one, but a somewhat subjective reality that a statement may be true to one, false to another, and as the first to the next. This implies true and false are not mutually exclusive in standing next to another statement, however, it does appear that we have a condition, aside from this sort of logical independence. This is that, a statement implies another hold the following symbolic meaning.

Three truthful statements from each of A, B and C, are mutually true as well, when their logical aspects go both ways in a circle from one to the next, and the last connecting to the first. If we have instead A of truth, and C of truth, if both apply to each a true and a false statement for B, then we find this inconsistent with logic if they pertain to each other. From this we have a compatability condition on their logical state. This means that they can be composed in a structure, but it is limited, and is mutually equally empty.

For this, B is then taken to be empty with respect to logic, as it is not a part

of a consistent framework. From this, we know immediately that this condition of mutual truth must remain, without implication of anything but a consistent mutual relationship, within the system where we have mutual independence of logical status. These kinds of statements are devoid of a real logical tense. We don't have a logical inconsistency unless with three of truth to each other, each implies another as true and false. From this, three mutual truths, are in a definite existence with respect to one another.

The sides of this fifth aspect of logic are that:

0.) Logically true/false valued with openness and no absolutes on the statements; logically independent of one another, but given as states only once their truth has been determined.

1.) 'Open' statements, that prior to a complete acceptance into the set of truths or falsities, are not judged but by multiple relational and absolute truths.

2.) True as a composition forwards and backwards; a bijective mapping not always one way but implicative of order in both directions.

These together form the properties of new truths as they work together, and yield a strange symmetry. If we take true and false to be exclusive, then we can perform the following in this space; or as a new form of proof by an absolute form of proof by contradiction. It can be used either way. For a series of statements we can begin to see this property in action, by the following transformation. The exchange: $T \leftrightarrow F$ in initial statements and conclusions with directions of the logical arrow leaves the property of truth and falsity intact, when these statii or logical tenses are interchanged at the start and end of statements.

This truly reverses the logical arrow, since we originally had, and now have: $(T \rightarrow T, F) \rightarrow (T \rightarrow F, T)$, and $(F \rightarrow F, T) \rightarrow (F \rightarrow T, F)$. Each goes to a flipped version of itself, and the two statements original states to their conclusions are each flipped, this is not purely the symbol we use, but the actual meaning. This mapping of two times for T and F also produces a circle of purely false statements, with truth in their indication of being false. An entire string of these can be formed and it can be proven that a statement correctly identified as false is a truth, while falsity of a statement which implies the reversal is not. We have also shown there to be at least one such string in absolute truthfulness.

True and False, with reversal of T and F and an arrow of implication is

analogous to De'Morgan's law as applied to T and F, and the direction of the logical arrow for all statements, and the statement or relation remains true. We must then show that the set of absolutely true and the set of absolutely false statements, are not empty. Then we may show that true and false are mutually exclusive as absolutes, with the names truth and falsity. Then we may illustrate this new fifth postulate of logic. We need a name for this openness. Then we can prove the existence of gradations in truth. Then an end to paradoxes from these absolute truths. We can show logic goes both ways, and show a complete one exists with implication of T and F. And finally, show and define emptiness, closed unreacahables and endings, and describe the two kinds of logical independence.

0.) Relationally open - any relation - bijective but open in logical judgement.

1.) Inclusively open - not included until proven with all existant truths but open.

These two give notions for what it means when two statements are mutually counitary in truth. Then we give more solid definitions of true, false, truth and falsity.

0.) True: taken to be provably certain as a correct logical state.

1.) False: taken to be provably certain as an incorrect logical state.

2.) Truth: the absolute form of true holding in general for all statements.

3.) Falsity: the absolute form of false holding in general for all statements.

Then, we would like to prove the existence of a new principle at work here, which manifests in all these things, and their proofs, in contradistinction to a proof by contradiction, or exclusion. This is a constructive form of proof and logic. This new fifth postulate of logic is that we do not know and hence cannot automatically include a statement from a given system of logic until it is found to be logically open itself, and either true, or false. Since this may take a long time, we can and must hold on to it without a judgement of its character.

Once found with the givens to be one of T or F, it is still open, unless it is found be an absolute truth, as these are then definite. When definite, we find that they can be put together, and these statements can be considered to be absolute truths. This fifth open postulate of logic is something of an 'unless...', future tense 'circumstantially', or 'might...' but it goes both ways.

A new such statement can hold the bearing of truth for something taken to be an existant truth. Finally, it makes no violation of an existant absolute truth.

We have here two kinds of propositional structure to consider. We can consider a logical system where only statements for which the propositions are shown to exist are considered, or we can consider a system where we consider ancillary suppositions on equal terms with those statements already solidly grounded. This is a type of closed relation and open relation as to new hypothesized propositions. This notion is already described by openness.

The fifth logical premise has the following properties. First, it is that logic is bijective, or bidirectional, logically conclusive after proven, and places absolutes at the bottom. Logic is hence open and bidirectionally secure, complete and mutually open as to logical tense, in past, future, or present postulates. And as incorporated into the logical set of statements, in being open to new statements without preset notion of truth or falsity. This is the category of open statements. These open statements are not given as true or false, but are determined later, or as they are recognized. Note that not not is not equivalent to exists but is actually equivalent to open and not exclusive.

Finally, we have empty which is the state of logical emptiness, when there is a half truth, or the statement does not apply to logic or of logic to it. These statements do not have relevance it seems, although they are just as important. They also appear as empty, because they do not pertain to the set of logical statements. These should be provable as such, if the logic is clear and solid, and only if they are proven as unprovable are they empty to the logical system under consideration, and they are then not open but exclusively closed as to themselves. It is tempting to put these in categories, but this is an unfortunate manner of proceeding. We can however recognize different genuinely useful notions as new in the paper. They are: Open, true, false, truth, falsity, void, empty, and null. It takes great clarity to definitively understand one statement as one of these from the outset of a given and without a very surrounding and embracing context.

We will also need a notion of convergent and divergent truth. In the case of convergent, we need show, that over a sequence of repetitious statements corresponding to a systematic axiomatic approach that true comes up more often or false comes up as more often, or the system remains limitedly open. We can only define such a system with gradations in a recursive fashion with quantifiers on logically based true false assessments. This opens up the territory, for we can limitingly approach paradoxes, statements of proof, such as the axiom

of choice, and other axioms that need be shown in the light to determine if they be of truth or not. By doing this, we can examine logic on a wholistic and general manner.

An example of an algorithm matching the form we need to determine end truths or limiting and nonpathalogical methods is given by the following. This is the origin of the notion of function on the space. For this we have a new symbol, and a logical function is not differentiated from a function in general terms. We use methods of each, to expand the meaning of the other, and we end up with a function as the discrete, or continuous, fully enclosing or embracing, everywhere defined and fully open to a fractal, with as many multiple values as we need, for all places among an entire set of source or input values, as a fully encompassing open and closed point set, for all values of the open condition of set upon all of them together, separately or combined.

This broad definition is useful, for when we need to have a point in its circle of true statements, exist with an argument group at all points in space, with a mapping back to this circle fully embedded within this object, but spread out and re-represented on the space as a circle of simply one points relation to its neighbors. This source value to functional value, is enclosed within the space, in contradistinction to a function for a space as a mapping. With this the space and function come together as a part of a combined whole. We let the function be a logical function and the mapping be freely from the circle to the circle, for all points on the circle. Let ϕ as the following represent the state or the logical status:

Then for a set of rules giving a general, multiply this state by 1, if the state of true or false is preserved, and give the state a mapping of inversion in one if the state changes: $X \to (1 - X)$. If the state is taken to be open, leave the state as it is. With this, if the state remains at one half then the system is equally true and false and not convergent, and is in this case open. If the state changes and possess no limit it is empty. From this, we can use probability theory on logic itself, on a metalevel capable of determining the truth of logical statements as complex as the axiom of choice, or to find empty statements in non-infinite time, closing the problem of uncomputability.

These open the space to a theory of measures upon the space, with open and empty upon a spectrum running from true to false, with truth and falsity as limits. In this space, we can represent many such states, but these functions do not stem the space except as a complete collection for all of them, and they run from one end of a multiple dimensional space of variability, to a completely filled space. The end states of the measures determine the notion of the filled space. Every interrelationship has a value and a related value, and these fluctuate as values on a variable measure.

These are roughly the logical values, as a function, of one dimension in space, at every point. Thus we arrive at the notion of function upon a space. These constitute a system, and they can vary from smooth functions to highly erratic and chaotic or fractalline. They are complete in a system of C^2 smooth functions, yet may contain ones as abstract as the Weierstrass M function.

Logical Systems as Settings

It would come in useful to prove that also, there exists a logical equivalency of the structure of decisions as understood from the perspective of a proof, and a navigation of this space and its rules as they exist when carried out together, and as these relate to one another, and in this of the proof of the theorems of the system as these work together under the guise of different topologies or spaces of mathematics, even those for which we can find a self contained proof. It would also be interesting to show that there is no self contained proof given the structure of a proof required for such a space within the topological space of the system to which it is applied. This would set a strong precedent for the way in which the different levels would work together and also for an isomorphism between topological structure and a logically based system.

These work together in such a way that we need also prove in such cases that the topological conditions are set by the mathematical structure, and not vice versa, and that there exists an independence of the logical system of mathematics and topology, however, it is also one of a bijunctive relationship, with each contained in the other, however separate and yet identifiable in each proof based setting of a singly existing system of logic, and not mutually existing and in isolated hierarchies, where clearly the proof and its system as well as its

logical precepts are not defined by the topology, but are uniquely separate and on a genuinely higher level that makes each logical proof unique unto its own means.

The language we use to describe these logical conclusions is then completely separate from the mathematical logic based system, yet each are fundamentally mutually dependent on the same principles and the same with respect to a more common and higher level of reasoning unique to each.

For the ways of logical expression, having to do with decisions non-uniquely identifiable, but unique in number to the number of outcomes of the logical system and therefore at a level where the topology in which the spaces coincide is identifiable, results in rules and outcomes in each step that may be identifiable in number if the logical system is saturated and complete within its own dependent and closed space. The topology of simple spaces and the proofs within these would then depend on simply provable logical standards and axioms, while that of larger more comprehensive spaces would be related to more complex and definable relationships as these work together piece by piece to produce a new set of complex interrelationships articulable only within the larger space.

If you were a point what would you have to express? Would it be: I am here. Or would you not know what to say, because you wouldn't know if you genuinely existed? What about adjacency? I believe you would have nothing else to say, as neither would anything else. Finally, what about: Is this the end or the beginning? There would be no rational answer to such a self questioning point.

This would then mean that logical decisions, at each step, in number, are equivalent to the number of possibilities within a given space, for/in a closed system in/for which there exists an open application at the start and in the end, and definite declarations in between that lead each one unto the same conclusion. One asks, where is the end conclusion? It must be throughout the space, and therefore, it is nowhere within the space, so in fact it must exist independently. This shows that proofs are independent of the spaces they are in. However, their principles and the decisions this entitles one to of course relate on a basis which leads to an irreconcilable conclusion that there exists no exact isomorphism, yet lest a dependence of one on the other.

If we can prove that the mathematical means of the space have a supremum

in their basis of logic however, we can prove there exists a fundamental limit to the space of a logical system of logical principles in its conclusions given that they draw upon a limited number of logical precepts or concepts as together and within a single space, when confined to this space, and with logical principles in number to the number within the space, given by true and false and the number of directions.

Logic and Absolute Truth Two

Besides the circle of truth we have another kind of absolute truth. As numbers, the zero, the one, and the infinite, each pertain to each of the other three in different manners. We have zero as equivalent not with one, but with the circle, in several capacities. As well, we have the one as associated with this object, and the infinite, each in their own way. Each as well pertains to the three kinds of absolute proof in their measures. The third kind of absolute proof would be proving in a noncircular way the logical existence of truth itself, without this truth.

This one seems unreachable, however, it is a combination of the other four, the conditions of true, false, empty, and open. Open is open to the truth of true and false until one is determined absolutely. Then, it is this one. True is true and open to being a truth until shown to be a falsity, or empty, or open. False is false and open to falsity until shown to be a truth, or empty, or open. Empty is open to neither, and does not exist until the others are each shown to be false.

From this we have one which may go either way, one which goes one of two ways but one first, and another of this kind, and finally another which goes but one way. One must hold true, but we must show this recursively. Consider it to be one such case. Clearly, it cannot be open, and cannot be the absence of the others, since we really have only open and true and false as definite statements, the other is the absence of that which pertains to this statement. With this there are really only three. Let us say we take there to be a postulate, undetermined in either of the three, then we can proceed backwards through these.

Taking it to not be emptiness, but either open or true or false, and since this

does not pertain to either, it is either open, true or false. Given it is one or the other, it cannot be open, because this requires the mutual inclusion of both true and false in a future context. We finally have true and false alone. These are each statements that are empty without being a truthful statement, in which case it can be either. Given the nature of us having emptiness without the end existence of these, meaning one alone, it must be that there is an existant quantity called the truth, which is a kind of absolute truth.

These things before, prove the existence of a set of absolute truths, one of which may be this circle of absolute truth. Given one only contains truth by its construction and the other, many truths, we find they are different. One with one element and absolute, but open to others. The other, an infinity of elements, complete, open, and only absolute as a whole. These are complimentary, both are absolute truths, and one contains the other in both ways, yet they are not the same. We also have a circle of absolute falseness, but it is really another circle of absolute truth, going in the reverse direction. This one exists, as does the first, and has no common intersection with the other, although they may overlap. There are then at least two absolute truths, one, that there is no absolute truth is false, and two, that there is an absolute truth is true. Consequently they are independent, and absolute, and hence mutually exclusive. These are then the truth and falsity as absolute concepts; never both nor neither.

Absolute Truth Three

The statement that there is no absolute truth is in and of itself an absolute, and if the statement were true, it would be self contradictory, and hence the statement is itself false. Therefore, there is no such truthful statement. The statement that there is an absolute truth is also an absolute, and if the statement is true, it is not self contradictory. Hence this statement by itself is not necessarily true nor false. If we assume that this statement is neither true nor false then we arrive at a contradiction, because the negation of the statement that there is absolute truth is the statement that there is no absolute truth.

Therefore, if one is true, the other must be false since both are absolute statements about truth or falsity. The statement that an absolute truth exists which is both true and false is false since we have shown that the negation of

there existing an absolute truth is false. So, it must be that there is at least one absolute truth.

From a different approach, in symbols we have, where P is a proposition:

$$\exists T \equiv P \tag{1}$$

$$\odot := \{A : A \wedge B \to T \ \forall \ B : B \in \{P : P \to T\}\} \tag{2}$$

$$(\nexists \in \odot \to T) \to (\nexists \in \odot) \in \odot \to (\exists \in \odot \wedge \nexists \in \odot) \to F \tag{3}$$

$$\therefore (\nexists \in \odot) \to F \tag{4}$$

$$(\exists \in \odot \to F) \to (\exists \in \odot) \notin \odot \to (\nexists \in \odot \wedge \exists \in \odot) \to F \tag{5}$$

$$\therefore (\exists \in \odot) \to T \tag{6}$$

$$\therefore ((\nexists \in \odot) \to F) \wedge ((\exists \in \odot) \to T) \tag{7}$$

$$\therefore \exists \in \odot \leftrightarrow \odot \not\equiv \varnothing \tag{8}$$

Then:

$$\exists T \in \odot \tag{9}$$

We can run this backwards with:

$$(\nexists \in \odot \wedge \exists \in \odot) \equiv F \tag{10}$$

Here, there exists is taken to be open and there does not exist is taken to be closed. We take the intersection of these two to be empty, and conclude from this that the set of absolute truths, if a truth exists, is not empty, as we accord the union of absolute emptiness and inclusion of a member as falsity. We conclude, if truth exists, the set of absolute truths is not empty.

Here, existence of a truthful statement is the essence of the absolute, and we find that if we have existence this is the absolute truth, or an absolute truth is the essence of existence. If we do take there to be an absolute truth then we have forever half a circle of this premise leading to another of the opposite nature. Either a truth being a premise or a premise being equivalent to truth.

From this we find, if we may define a truth as a premise, then it implies absolute truth is existence. Since there would have to be no truthful statements to have no absolute, if a truth exists, it is also absolute. It should be commented that I have not used the rigorous version of there exists, ($\exists$), in conjunction with in, ($\in$), and have meant by: ($\exists \in \odot$) that: 'There exists an element in the set of absolute truths'. The statement itself becomes one such element of absolute truth.

In this, it appears circular as a proof, yet it is a true statement, but only in the sense of the existence, of this being the one absolute truth of this statement. If this absolute truth is the only one, then we have truth in this proof because the existence of this truth is enough to prove its equivalence to such an absolute, and the circle of logic is unbroken and complete. If this proof had an ending, then it would end in the absolute, implying that its beginning would be equally absolute. From this, it cannot be that we need something beyond that which is of this nature to prove it, and the proof must be equal in its end and beginning in absolutism.

If there is such a proof, then this could be but one, but since it does prove the existence of absolute truth, even in a nearly circular fashion, it is requisite enough to prove the existence to prove this truth is absolute if it exists. The implications in this proof all go both ways as a series of statements with the implicative arrows reversed, and hence are self contained and not reaching a falsity at any point. Notice that we did not begin with the existence of an absolute truth, as an assumption but instead, the simple existence of truth, which is a presupposition for its reality. With this, this proof is not entirely circular, although it ends in a new truth, the conclusion of which is that if truth exists, an absolute truth does also exist.

This takes us from a statement of existence of truth itself, to one of the implication of a lack of non existence to absolute truth, removes the exclusion and yields no alternative but to accept that there is one. We have also the implication of not only the beginning statements, but also statements that refute the nonexistence. Only such an absolute statement of such truth can do such a thing without crossing the boundary between truth and falsity. We need one presupposition, that a truth exists, yet this proof does depend on itself in a way that supports this, but only if the absence of one is negated by the statement, which it clearly is.

This part is non-circular, and is interesting, because we have the adjacent potential falsity contained by the existence of this proof, in a way that nullifies nothing, in that it is complete without actual negation of a thing. Then this is nearly circular, but only as it approaches the falsity, and encompasses it without inclusion, and total and complete adjacency. This is essentially the circle we have redefined as one such complete truth. This would imply the circle of logic is circular, yet the proofs before were not circular, but reductive and constructive.

Building from both sides at once, we see that they are complete where they meet, within each other. Although each is equally valid, together, they implicate there are in fact two ways to reach this conclusion, and together, they imply uniqueness in the end conclusion but not in the means of the proof, although of completely different forms and natures. One is absolute and a single truth of existence, the other the truth of the existence of an infinity of completely open connected truths.

It would be wise to answer the question as to whether one is contained in the other. It appears that the absolute form of truth is contained in the other of non absolute form, considering how incorporative this open string is. The question is now if the open form is contained in the self circular, which appears closed at first sight. I would suppose that given it is an absolute truth it must be, but it appears closed at first inspection. However, neither really contains anything. This is the only initial conclusion we can validly form from this.

Two things without a container, each implicating truth unto the other, empty each but whole individually, these are at a level where they are like two varieties of truth, as an observation, one closed, the other open, yet both of the nature of complete truth. These are not the same upon first indications. Interesting, the one we initially we have taken to be the closed one, is contained in the open, since this open one contains an infinite set of complete truths. With this we have the one built from within without and the other built from without within.

One immediately wants to know if the open can be contained in the closed. This can only be true if there is more than one absolute truth, in which case we have an infinity of such absolute truths, and the proof above is open. To understand this, consider the truths of the circle we have defined to all be

absolute and closed, if this were true, then the space would not be open, and would cease to exist in absolute form.

Since we have shown by alternative means that such an open circle does exist, and that this absolute truth is contained in the open circle, clearly it must be the case that the truths of the circle and the form of this absolute truth are mutually contained in each other, and both open. Finally with this we find the truth is both absolute and open, with two ends meeting in a common unity. Each proof is valid, the absolute truth is valid, and we have shown that it is true there exists a circle of complete, open, and absolute truths. Since there was proven to only exist one, there does only exist one, and these are the same. All of this can only be if each statement of the open circle of truth is absolute and truthful. There are an infinite number and these create an open truth for both forms of proof.

We can now proceed with induction on the absolute truths contained in our set to produce a non-circular or at least non-closed infinite string of open and complete truth, as two types of construction of such a circle of absolute truth. These premises fit inside the end or beginning of the proof of absolute truth above. These imply each other's existence, the one such truth pertains to the complete and open circle of absolute truth that is so formed, and we finally have a statement of one complete and absolute truth as existant, both of its existence, and the existence of truth within it. The existence thereof is assured, however, there is only one, but two ways to reach it, both infinite, but contained as proofs in each other in different ways. They are identical products but different constructions leading to this common unity of completeness in the circle.

Curious, is the usage of the set to define the system of absolute truths ($\odot$). This set is based upon an auxiliary set of propositions whose truth is previously defined as certain, or an association of truth to a thing. Then, we must include at least one proposition within this set, (T), the existence of the value of truth itself, in order to define or compare other potential truths to this statement, moreover, we postulate the existence of an association of truth to an object of logic. This has a hint of being recursive, but is constructively deductive.

If we had begun with the null set, ($\varnothing$), or with no elements within this set, we would not be able to begin the comparison process nor bring anything into

contact with something true or definite. The interesting aspect to this is that although the statement of the system of absolute truths is defined with a set, it is not identical to the set that we start with and which is used to construct it. The idea behind all of this is that we cannot make the definitions for absolute truth circular nor can we base them upon falsity to begin with. This is because of two things, the opposite of the opposite is not always the thing itself, and secondly, we must insist that truth exists to begin with to make the statement that there exists an absolute truth; i.e. we cannot begin with nothing.

The limitation of this proof stems from this fact, in that it does not imply that the truth exists absolutely, but that if truth exists then at least one absolute truth exists. Secondly, the conclusion of the proof illustrates that the set of potential absolute truths is not empty. This however does not point to which absolute truth this is, nor does it extend to mutual systems of truth. When we have many such systems they are related or contained in one another. In which for example there exists an inverse, $(^{-1})$, for all numbers in the non-zero rational numbers, while there does not in the natural numbers exclusively.

This is thus not a statement about absolute truth for all systems of truth, but rather, for the nature of truth as defined in a system which possesses both truth and falsity, and holds that in a system of truth and false there exists an absolute truth. The middle possibilities of neither and both are excluded in both the verbal and mathematical proofs, and the issue of the opposite of the opposite not implying the original thing has been avoided.

Further Observations on Logic

An ever expanding uniqueness is a part of this logical system. It depends on many operations, but the fifth is a combined motion of logical precepts. One, is that logic is transitive among the objects under question, and two, is that they are unique (as a factorization is), and then, third, is that they are determinable, and logically set by mutual conditions. A central decision or aspect of logic that confuses and bewilders me in its simplicity and in its description, however complex, is the notion that the different aspects of two logical circles can pass through one another freely as connected by points of a conceptual understanding of two loops, depicted in space as a union of two circled sets.

The center and the edge are separate, and yet the space of their existence admits a coexistance without interference. These together are encompassing of the notion of a point and the circle. Together, they are 1:1 and complicitly and consensually existant. They are free of any mutual conditions except coexistance, which is not restrictive. This can be applied to loops in the space freely, as these must be free as loops to move in the space. The interesting thing is that the loops in existing can form the space, in such a way that they fill the space and form a compatible topology upon the space which is complete and formed from epsi and points of intersection, as one. With all circles everywhere uniquely the same locally, this embraces the concept of circles as counitive in their mutual truths.

Imagine the epsi are everywhere in the plane. This will with their shrinking move the points as infinitely small, to coadjoined into one overlapping another, and contained. The absolute limit has the circles; if these collapse at the same rate, leaving no space, in between or inside, these circles. The central concepts are these three: cognitive, open with bidirectionality, and the eteological approach. These are the realms of mathematics that are now touching and for which there is no hard boundary between several of the disciplines of mathematics:

Geometry: Unification of hyperbolic and spherical geometry with flatness of topological independence.

Algebra: Completion of a transcendental number system, digits of all primes under addition.

Topology: A new topology with one hole and exponentially decaying closure.

Logic: Continuity of logic with respect to all truthful statements. New postulates and logical tenses.

With these we have the hypothesis that all aspects of mathematics are connected and without separation. Their continuity is from the following: Logic is open in the forward and backwards directions, by the nature of supposition to conclusion with no real division with precedent of a logical statement or a pretense by the nature of completeness, and by the many inferences one can draw about one thing by mutual truths.

There is a more general principle at work here, in that the nature of the completeness, here of logic, leads to the notion that we need have and define an absolutely true statement as the limit of a sequence of truthful statements when it is truthful in relation to all of them. Discretely we may of course have a number of truths that together work as one, and relate each with the

hypothesized logically absolute truth as for it to be truthful with respect to all of them. Additionally with a truth that is relative we may have many layers and absolute as comprehensive to all of these.

We can also show constructively that the new logical precept of openness is provable as existing in a formal way when we have layers of truth as dependent on one another, and when these are future oriented statements inclusive and open in the direction of the future statements. The true and false statements and as well our proof of absolute truth with one set contained in the other lead to the conclusion that logic has an opening. This is as the upper or opening measure of logic builds toward the absolute nature of the existence of openess. And as if open towards the higher order statements which cannot be contained and logically exist with their large opening pointing towards these future statements. The fundamental states come from this foundational set of existing states or tenses, and support it from underneath.

Steps between different stages are required to non recursively define a truth as absolute from below or from the foundation upwards, and additionally to have a relation between layers hold true upon which we can rest this form of absolution and relationally open logical truth, merely by defining an order to a set of stacked and adjacent statements of truth, as these build in order and scale within the logical space. We finally understand most of these new freedoms of logic as a result of being able to define a linear fractal as a logical function.

In the two dimensional realm the epsi may shrink to such a level they do become points in this limit. One could say that at this meeting point we have points in a circle, and the circle itself becomes the manifestation of the geometry of the point itself in this new language, where the tendency to blow up from the exponential and the tendency to shrink to a point as a whole by the natural log, are balanced perfectly, yielding the abstract notion of a circle, without a radius. This is the epsi in the limit of its existence, and may by way of its structure reveal something deeper of the structure of the construction of the circle, now of abstract truth, in a mutual existence of a circle of truth and its dual, another circle of truth by logical inversion. The mutual object created by these is a circle of abstaction within the absolute nature of truth.

Points going to circles yield new notions on topology. Missing an origin, a center, and a single point, they are interestingly the perfect melding of logic and

topology. This is what exists at this interface and is an entirely new branch of mathematics. The idempotency is not real, nor present, but it is very close, and considering the similitude, we find that there is a place where these symbolically represent the same thing, a universally and biexistant notion of determination of truth or falsity from one another, with a differentiation of reductive forms throughout logic. This perfect symbol does not have an orientability, and instead, is a new term. Since it does not have an orientability it is in the category of truthfully absolute statements. Or objects, and there are two generated by this one, both of absolute truth.

When these rotate to merge, which is their orientability overlapping, we get empty. There is no direction around the circle either, and T switched with F on the logical level, with reversal of the arrow of implication results in the same circle. Logical relativism (true and false by their natures reversed, not only as symbols) and reversal of logical direction occuring to both upon the string still holds true as a whole. Merging them, yields the essence of nothing, yet it is still open. This is zero, as on the edge of a mirror. The mere existence of a system holding this fact to be true implies that the system of logic really has arrows going in both directions between all statements. Direction is chosen globally and locally, and it is as there not only at the start or the end. As a whole we have independence of True and False to direction, and independence of True and False as truth with inclusion.

With this, we can support, logically the theorems:
1.) Logic goes both ways.
2.) It is open by its nature.
3.) All truthful statements are mutually supportive.
4.) A string/circle of pure truth exists.
5.) Its reversal is also a string of pure truth.
6.) However, they have no center.
7.) And, no overlap.
8.) One is $T \leftrightarrow F$ of the other with the logical arrow reversed.
9.) There is no common center.
10.) The exists a zero.

As overlapping, separable, and passing through one another; they are counitive, in their axioms and postulates and truths when overlapping, and we may not even identify their overlap as a statement in conflict at their crossing, as

true and false not in violation. From here, the statements hold in a mutually compatible and mutually supported way, as two statements holding a relation of everywhere the intersection a true relationship between them and their overlapping spaces, for every intersection of these two curves, as a transitive property of these circles of truth.

These points and their circular spaces or boundaries can fill a space, and are counitive, meaning, they have a coexistence in the union of their spaces as they operate and cover space uniformly and completely. These tiny circles may be taken to exist at every point on a surface, and this is a useful notion. What is the rationale for these existing? They exist to fill the space with a new notion of topological existence or to admit this possibility. What should their study of this be called? It is a mix between logical precepts and topology and a little geometry and analysis.

Final Conclusions

By way of statements of common sense and things shown within reason:

We have found that logic is not always as it seems. Sometimes it is empty, in such statements as those with truth and falsity combined, and as well, when they interoperate without a clear boundary, or one where these pieces seem to come together to have a clear boundary as one common element. These are, if coming from different directions sometimes conclusive of there being an element of truth and falsity to a common thing.

This is to have it sticking out in two different directions, however, when it is on the boundary it cannot really do this. If we had this case of existing only on the boundary, and as both sides as different, then we would have indications of a logical setting in which there exist three potential capacites for types of truth in the sense of existant definite qualities or states of existence of logical structures that hold as existing.

These are all true states of the system in the sense of being existant, but this does not make all these states true, it merely means, as we have these three, that common sense would dictate we need more than one concept with inclusion and exclusion to differentiate the two, and that as they can be defined only through relations that we need at least two declarations for the differentiation of each

type of statement from the rest.

These states are of the number of three, however there is a fourth. We have empty on the boundary where a statement is stuck, open on a boundary where none as of yet exists, and true and false. These are divisions in the logical space and not of a representation, as logic is without dimensionality in its purest form, and there is in actuality no duality. These states can only be open, true, false, and empty. One is simply indivisible, as empty of a logical statement concurrently. The other is open, as it pertains to either statement, with the implied inclusion of empty as a case to be handled later if need be, or discarded. The others are definitively true or false. The division is not clear cut on empty, and open is simply open, and undetermined.

As we can see, the determination of truth does not pertain to true and false after these are understood as such, as one is then truely false or truely true. As we can see, there is clearly an open determination on those statements taken as a part of the open ones and yet to be determined. The empty statements are stronger, and should ideally include those statements that relate to the tough ones for which we have a conflict of logic, until an understanding is reached mutually as to the determination of these. These are the statements that have fallen from being open all the way to being not yet determined, or even to those for which the truth has not yet been determined, but have previously been determined to be inapplicable, given the existing system.

We might accord there being potentially an infinite number of steps to the given end determination of logical status, but in practical applications in can be smaller, and given this number as a real number on an interval we can find a truthful mapping. The numbers associated with those of the open circle of truth, for each point on the boundary of this circle in completion, or for any two statements on the extremum of this circle in distance along it give it a logical metric. This holds as a relation of truth between any two statements, in order, giving distance of precept to conclusion as a set of mutual distances between these statements to their logical value, and potentially a self identifying question on the number of these steps as a relational truth between all points around the circle.

Open statements are those statements for which there does not exist a logically definite underpinning until future declarations are understood, and

are not defined as true or false, until all absolute truths or falsities are collected as pertains to them. Openness of a statement is therefore defined as a statement about which the truth has yet to be determined. Empty statements in their absolute form are those statements that are not predetermined as either true or false, but for which further there is no openness and there is no declaration as to true or false. These statements are those proven to be neither openly true nor false and essentially limited in application in that they never reach these truths, especially if they are proven to be as such. Consequently they cannot contain an absolute truth.

Logically speaking these are the four statements and presuppositions behind logic in this setting. They are each pertaining to each other, although true and false are more rigid, and true and false do not pertain to the empty or the open statements. The only thing differentiating these words is the order of their precedent. If we consider the way they work together we can see they build a system of four folds of logic that never mesh with closure in practical application or close completely upon themselves alone.

Each can be applied to the others, and a statement without application can be taken to be empty, or can be taken to be empty once it is discarded, as a statement can also be elevated or demoted between the levels, which do not exist along a linear one dimensional distribution or set of pillars. The fifth postulate then is really not openness, but more in the withholding as an unless, the statement of approaching a truth or falsity, a statement, without predetermined logical precedent of any kind. This in its absolute form may often be confused with emptiness, however, it is not the same thing, and is an aspect of openness.

It is the statements which we would take to apply to these new statements which are in their application in fact considered to be open in such application. This new word should be a way of approaching a truth or falsity, without prejudgement. This is undetermined logic, and it is in its purest form an application of openness to future attachment of logical conclusion or judgement to a statement. Such statements are taken to be open in such a system of impartial and unbiased logic, where we have a methodology of an 'eteological approach' - an neverending or eternal form of logical approach without prejudgement.

The validity or conclusiveness of a logical statement until supporting truths

are found, by declaring them when encountered to be neither true nor false, but open to either alone is at hand here. This could alternatively be taken to be a none as of yet acknowledged logical certainty, or, in taking statements to be open and undetermined in their truth or falsity once first encountered until understood with logically supporting and supported statements first.

Clearly, this is an open declaration of logic and an application of understanding because it is inclusive automatically to such an open statement in the future sense of included logically following or related statements within its realm of application. These are taken to be free of certain definite logically conclusive features at first sight until an end conclusion given other statements is found. Only such statements can interoperate with a computer with such systems hardcoded and understood completely first, as the source of a system that looks forward in a sense to its potential future, makes a present decision to reorganize given facts based on this, and makes a completely new decision unheard of. This kind of logical system works in operation to determine new and genuine truth from given facts, as acquired. One such computer capable of this beginning alone from scratch can only begin by way of openness with respect to the future of its sensory operation. To differentiate upon the acquisition of new information or that which creates closure and with newly encountered openness is then key to this decision process.

The isomorphism of the structure, and the notion of using topological objects as standards for logically supporting structures, indicate there is a strong linkage between these two as mathematical aspects of reason. The understanding espoused by this paper is that the two connect together in such a way that they logically support one another, that neither is below the other but that they are mutually reinforcing, and that the aspects of a logical system if it were contained in a topological object would be connected as a whole, as a part of a common understanding, and would be limited by the nature of the topology. With this we find that the interconnections are strong, and also common.

As these work together, there must exist on some level a universal way to look at each statement together, in the manner in which these provide a common way to look at logical systems in spaces, given topological properties, on a common level of understanding. This is a metalanguage for talking about these spaces, their properties, and in comparison to the others, in such a way that we have a unified approach, although it has not been developed, we have

a complete understanding when we reach this level and can see that the ideas existant and necessary for the description of the logic of these topologies are common to all these spaces in many senses. This provides a unified way to look at the logical systems instantiated by topological thoughts of logic.

In this paper, we showed properties of logical systems built within complete topological structures, from zero dimensional precepts having an absence of meaning or truth, to one dimensional ones for which if we have a crossing we may or may not find an empty condition upon two dimensional spaces, and even described a new fractalline logic. We showed that the idea of incompleteness is false and so is that strange notion of having both true and false or neither, as these are both incomplete and mutually exclusive as well as disconnected. Finally we showed that the circle admits a different logical string of pure truth, one that is complete and open. Then we illustrated that the circle is open in its meaning, and that if we replace the points of a space by these we can produce higher dimensional topologies such as the sphere and the torus, where we also have complete truth.

These spaces admit different incorporations of meaning, and suggest that different logical precepts pertain to each of the structures we can build within different topological spaces. This points to a deep connection between topology and logic. This must be in part true, and although being foundational is not one to one. Instead, we find that logic goes beyond the space, but the rules that pertain to the understanding of a system, are completely analogous to a space with logical limitations. These are logical constraints. In this we find that there are boundaries within logic, just as there are within topology, and these create separation between different actions of this system. This as it is implies there is a level upon which these are identifiable constructs.

One of my final questions is if this free string can be defined as genuinely open. Given that it is infinite, how can we define anything but open sets in such a space. And given we can only define open sets, where is the closure, even though there is no escaping this circle of truth, it must be open, to be considered infinite in extent, and without boundary in terms of its set of logically provable axioms, true statements, and with exception to its true property of being open, since it cannot be self contained, but is not empty, nor reliant on closure.

If it were closed, it would not be infinite in extent in the sense of a set of

logical statements, each with reference to all others, since this would create a set of zero dimensional elements without the properties of truth that the circle itself represents. It would not be self consistent, and would utterly fail to capture its true meaning with respect to itself in a consistent manner. Zero itself is different, although being of the same symbol as the circle. Zero is complete in its obscurity, and at the same time, is self definitional of being a truth of itself, blind to all else, hidden in its own existence. If we could pin down a zero, there would be none, and if we could not, there would also be none.

Since the circle is a complete self existant truth and is completely self definitional and it fits the properties of the circle ironically these two are in some senses very much like one in the same object. They work as a common single truth, because we have uniquely identified this common infinitely open and complete truth as the circle, have identified there are essentially two, and that in this sense, as they fit each others properties, there can essentially be only one real such object, but there are not.

The zero is however not an adequate opposite. The circle product with itself is a new object in its space, but is equivalent in some of its properties to the zero. It is therefore only precisely the zero if we have two conjugate concepts of logic. One the logical principle, and two, the space to which it applies. In such a case they can be uniquely identified by the principle that the zero is equivalent in its properties when multiplied by itself, and the circle is the same as it works with another. Although many can work together, and they fit each other's properties, these properties do not change when multiplied together. In this sense each are identities of logic. One of absence, the other of existence. In this sense, truth is close to existence.

It seems that the logical properties do change, but these are ones in application, and without a space to which they apply these are existant properties inherent to the objects. After all of this, we have the zero as nearly equivalent to the circle in some settings, however as unique as the circle is within logic. We would often take the circle to be the identity of logic. The identity of logic is not negation, but instead, the form of zero under addition. Here zero has an identity. If we can show the properties of multiplication and addition are the same with a new logical statement developed, then we have a complete isomorphism.

There is a notion of a "moving identity" wherein under multiplication we have the number as a mapping and frozen at its original state. A zero suffices to produce this, but only if we consider multiplication by zero as a local property. Under consideration of taking multiplication by zero as being a local everywhere property of the circle, everywhere along the circle of complete truth we have constructed. This is equivalent to it having no center or origin.

This means that for in the abstract sense the circle possesses a property of a moving origin, or one equally well applying to every point along its existence. There must exist a simple operation that leads the circle back to itself, and this is the identity of one. However, we can see how these are abstractly related (the zero and the one) by consideration that the identity of one is equivalent to a local multiplication by zero.

Since this infinite circle contains complete truth, take one such space. Under addition nothing gets shifted, and consequently we have an identity mutually under addition, this operation goes around the circle, as the integers or the real numbers count consecutively. As a consequence under addition we have a preservation of the identity as the zero when added which yields the same numbers. We must use the points as circles instead for the process of multiplication, since this multiplication is a statement which would shift us if they had a finite size.

But they do not, nothing is negated or shifted by the zero, and it is not not, as we sometimes logically presume given the nature of it preserving the identity of the circle. It therefore becomes a logical identity with relation to the circle as well, and the circle to it, for under addition the circle being introduced is another identity. Here we find these as two identities of logic, with uniqueness.

These are the dualistic absolute truths of logic, which under mutual application are preserved as identities and preserve the identities of each other, generating the rest of the structure of logic with various mutual and simplistic relations. This dual existence, one of nothingness, the other of existence itself, are both equally solid and absolute, and in their mutual preservation, are regarded as strangely not equivalent, and therefore inequivalent truths.

The circle becomes one unto the zero, since the identity is unique among group objects, and the circle clearly preserves the zero's property of not shifting under multiplication or addition. Here we see both have this property of shifting

or not. The zero is then seen not as a return to the center, but to the circles individually, of infinitely small size. We find that they transitively operate as individual elements upon one another. Clearly the order of operations in this does not matter, and each process yields the same result between two (of multiplication and addition).

Given this they are the same element as the identity, but there are two of them. We must also show that they do not negate each other by such a process, contrary to our intuition. This works and operates, because essentially the operations work by preservation of logical statement, and not the presence of a negation, which the zero cannot be, since it is the absence of a thing, not something bringing something into absence, in the sense of existence, the absence of a change, in the process of addition, and the presence of staying fixed at the origin with each such existant string with multiplication.

These are then closely related to the origin but both different in that they are coexistant as truths, one in the same, yet are not the origin, which remains separately fixed, and as a reference, where as these are not. Our only remaining confusion is if these each contain nothing. Clearly the association is strong between zero and nothing, but this is far from it on the conceptual level, where we find them of the same nature in containing, or in a sense keeping senses of truth under action of logical precepts at the same locations and in mutual relation.

We can then see with this property that these are both completely the identity to each other, and given its uniqueness in any group of such elements, taking these even to be the numbers, and given they both apply to a space of any dimension once we have redefined points, we find that they are idempotent, or the same element within logic. One of the strongest conclusions of this paper is that there exists a self contained yet uncontainable one dimensional free string of infinite truth, open, in the form of a circle, absolute and freely intercompatible with all others of the same nature, as the zero is.

Finally, if were to interpret these as sets and literally as numbers, in the setting of a space with a topology constructed of such circles, then we would find that as we approach the point we usually refer to as zero, as from a circle coming in from one, then the closer we get to the inside, if we were to reflect this off the boundary at one, then we would find the limiting procedure a circle

on the outside of increasing size. Each is preserved in its structure, yet never actually reaches this limit. Multiplication by the circle of true statements is the identity, while under addition, the zero is the identity. Consequently, they preserve their behaviors and their properties, the process even of bringing one to zero, and the process of approaching infinity.

These notions are compatible with the notion of number, when we consider the new topology to be constructed of circles, since each point possesses an inherent property of approach, and the concentric circles each indicate a new distance between them. Saturating the plane with these gives us completeness, because they perfectly mate with one another, although in a honeycomb they would seem to create voids, they do not do so, because the spaces between are circles also shrink at the same rate as the circles themselves, being smaller than the contained space.

We do not have circles for the points of the circle of true statements, as each point in and of itself, if a circle, would be another contained string of infinite scope, and we have taken these as not containing the whole string or for it to be self contained independently. As well, we can't really even use points for this circle, however by mutual consistency we can use shared points, and in this sense we find a form of shared truth, as one point does not consist of the truth when isolated.

Since circles would create self contained truths and these are multiply referential, we cannot have a contained whole among the elements of the string unless it be the entire string, and consequently we cannot use the entire circle for these points, as an aspect of its existence. These points are really not separable from one another in this circle, but are continuous, and hence they are connected and open. They would be closed, and the line of logic along this circle would be as well, if they were circles of the same nature.

This covering mentioned is a fractal and a new type of space filling, compatible with the notion of nearness, and this set is dense. If we consider such a circle to be covering part of the space, its boundary becomes infinitely small, and the space appears to contain $\pi - 2$ more boundary than distance, but distance being now dictated by the circle, we arrive at a shortest approach given that we need not go around but between any two. Since all points now contain complete truth, they are mutually dense, and open at the same time.

Although we cannot visualize this space, is is infinitely flat and contains within it natural extensions of complex analysis for poles, and when a void or hole appears, it naturally solves the problem of circulation creating a change in the summation of curl within such a space, since the circulation compatibility changes with the removal of the point in a way that makes the actual change in the measure around, the reflected change in such a curvilinear integral around a boundary encircling this hole.

With this, we need no extra operation of cross product to extract the pole, and many other problems are simply resolved. The circles are compatible because they have orders which intersect in mutually true statements, and approach each a limiting character of a point when brought together, no matter how close. As these approach each other, they become open again, and are not distinguishable as two sets, because at an equal rate are already open to each other, may overlap, and the intersection of their regions or the empty space between them also shrinks to zero, as they do in size.

We can no longer think about size, and only relation. Given they coexist, the issue no longer becomes one of mating their spaces, when we have that they overlap freely, a single circle can cover the space for every point, and their mutual intersection although being at their centers potentially is empty here. Hence they have no fixed condition of relation to one another, and are consequently open under composition in a free and complete manner, over the entire plane. These are therefore empty in the one condition that would make them mutually interfering and incomplete.

One would finally wonder if one could scale these new points. This seems possible if only we change the local metrical condition. Such a thing preserves the properties of a point of this nature, so even this space has a natural curvature to it. This finally also gives indication to suggest that the ones on a closed boundary have half a measure, and hence, become normal in their notion of distance at a boundary, as well as being compatible on the inside, but possessing an intersection with their centers on the edge.

If we look at the ones just inside we see extra information. The circles that touch this edge do intersect their centers, and here we have a zero, in a new sense, one of the nature of an end, just as the circle is broken in two. At the boundary the circles also meet in their condition of a line, whereupon we have

all of them intersecting each others centers, and the condition of no new center in one direction of extent.

The limit is the boundary and is now associated with existence and compatibility with the old notion of limit at a finitely closed boundary by the notion that the limit is defined in only one direction and no longer open to being infinite and free and therefore open strings, but instead, those with limits themselves. This limit is completely defined as along the directions perpendicular to the edge, given that the limit exists differently with a half circle than it does with a full circle, and these half circles possess an edge when the boundary exists.

We can even travel along the edge with a straight line with the old analysis, with the limit commonly defined, as continuous and sharp, as the circles vanish to being actual points, and only their interior half circles remain. This is consistent with the nature of a closed boundary and closure of the system of open and truthful statements for the common set, with the notion of the circles closing, at a common boundary.

One abstract case to consider here is that of an isolated pole in a fractal. Here it seems we do not have a circle. But without it, there would be no truthful boundary around this circle. With it, we have an edge we can follow, and compare to those that came before, along the edge leading to this point, wherein they have a disconnected component. However, they are connected by the fluid like surroundings and their influence on this surrounding region, wherein the outside is connected and complete as the interior.

With this, we can see that these new circles complete the notion of fractals, in their construction, makeup, and logical systems built from them. As there is no clear boundary in these fractals, we see their structure is truly compatible with these new epsilon sized circles. I am terming these 'epsi' - or infinitely small sized circles of arbitrary dimension.

All this is possible, by considering, a new alternative notion of limit leading to a point, compatible in this way with all previous definitions of limit in analysis. If we consider it this way, to show that the circles once shrunk to points can be re-expanded to give them this new interpretation in spaces of arbitrary dimension where they find application. I do not think we need go much further to consider other objects from which to build points out of, because the circle freely extends to higher dimensionalities.

As a final application, consider the axiom of choice, based upon the simple idea that we can have an embedding of choices in other choices, with openness in this new logical framework as a system, and that choices of choices are still open choices, although a decision is not made yet, by building back to choices as of yet unmade. Consider from this that one can make choices upon choices, or choices of choices, without going into multiple choices, as simultaneous and inclusive sets.

With this we do not immediately run into a contradiction, but instead a sort of infinite recursion of choice, which flattens our choices to ones where each choice is eventually an infinite number of choices, and our end choice, is included in this set, for which there is no choice we can make which exclusively chooses one from among this set, the set of all choices among choices of choices. When these choices, which are perfectly valid, are included, we find that there can really be a free choice, however, one cannot be made for all sets, inclusive of these, and the choice function is not open in this direction, but instead closed. With this, there is no truthfully clear axiom of choice.

These thoughts spark a renewed interest in the connection between topology and logic. The ideas that the spaces are the same, does indicate that there should be a unique attribute having to do with each topology as it accords with a system of logic in part as it pertains to each of these. The logically provable and the logically supportable are not the same. If we are within a topology then we are limited by this topology in what we can say about statements within this space.

As well, it was interesting to note that orientability could be accorded with truth, and the preservation thereof, for without it a space does not match up to itself with these statements. One of the strongest statements in this paper is the statement that there exist truthfully true and truthfully false statements, and that there exists a fifth postulate of logic as it pertains to the end potential determination of truth or falsity from givens which we take to be the condition of a statement being open.

Finally we have three aspects of absolute truth as proven by their natures:

1.) Existant, given a process of exclusion among the four logical quantifiers; one in number.

2.) Circular, ever encompassing yet closed when alone; arbitrary in number.

3.) Uncontainable, a circle of free and open pure truth; infinite in number.

These three fit together as one. Given that the second is arbitrary in number, the last is infinite in number, and the first is at least one in number, we have compatibility as one. We have at their core, these three aspects: Existence, Circularity and Uncontainability. If there were only one absolute truth, these then become properties of its existence. It would need to be infinite, open, and existant.

Each mutually reinforces and instantiates the others but depends on the three categories of open, true and false, or empty. These are all hingal on each other, yet each coexists with the others. The first depends on the existence of categories that do not yet seem to exist until we consider the existence of the others. The second does not seem to exist until the first and the third exist. The third appears to exist openly and independently, and is non circular, but depends on the same attributes as these others need. The second becomes the third when we have the first and third within it, and the third becomes the second when we have entirely the first and second within it.

Together we find that the third and the second are contained in each other although they are open and closed. If we use the first with the second repeatedly we arrive at the third. If we use the first with the third repeatedly we arrive at the second. If we use the second with the third their intersection is the first, and is fundamentally without closure or openness. Together these saturate the space of potential truths, in its various forms. Unprovable yet given tautologies, circularly true statements, and independently provable truths. We can of course reason the other way around for completeness, finding that the first two truths are included in the last, which is open to all these truths.

In full form, as identified, any two in fact instantiates the other, and all three together yield three absolute truths that if contained in each other, have no container, no closure, no pliability and no incompleteness. We arrive at the truth of the existance of a complete, absolute, uncontainable open truth of three varieties, each reliant upon the others, mutually supporting as one ultimate complete truth, with no properties.

We find that mutually, truths are not negating and are instead, all mutually supportive. In this we find that absolute truth is completely open, without form or qualities we can ascribe to it. It is free of properties, blind to the invisible, and containing nothing, nor a thing contained, all at once. A truth which does

not change is still a truth, and although a truth may change, there is a truth which is yet to be a truth and is eternally true. The existence of these truths is an eternal quality of truth itself.

This new foundation for mathematics offers us several new approaches. In the original form mathematics is the abstract, clear and transparent division of one from another, as an abstract idea or symbolic notion. This is so as to find the balancing point within contrasting notions. The numbers are representative of symbols or objects, each with as many properties as we like.

Logic by its pure essence, is without properties. Math is a universal mode of language used to speak and convey concepts dealing with numbers or their properties. Numbers are usually representative of quantity, yet not all are. Additionally, we have operations that work on interinvolved concepts, and represent operations fundamentally on lengths or symbols. The circle of truth is the culmination of many new principles, and is an existant, visible and open collection of these truths in a unifying and direct application of this expanded system of logic.

If there are no true winners, is there necessarily a true loser? This cannot hold true, because of types of equivalence under mutual relationships. Or does this hold true if we interchange winners and losers? Are there sometimes no true losers in systems of these? These are important questions but they have definite answers. On first inclination, if we have a game, and we treat the mutual winners in one category, and the losers in another, then we have two types of equivalence. One is of mutual equality under application of many to one, while the other is mutual equality under application of one to many.

Additionally, there is no guaranteed winner with two players only and an order to playing. This is not just symmetry, but if they alternate, or we interchange them, no player goes twice in a row, therefore, this being part of the game (otherwise it is trivial) it identifies one start over the other, and it could depend on something of A and B that depends for a guaranteed winner, one player going twice in a row, something that is not determined by the first two trials. Thus, it could also depend on something of A and B with characteristics A and B being possessed by A and B as players.

We have equality itself as when these parts are treated equally as wholes. For consideration, take there to be fifteen people. If one does something and all

are equal participants then each is equally participatory and each have the same undivided quantity dealt. If we have many on the other side, and we consider there to be for instance twelve people then we can have a form of equality as to the person to whom a reference is made. This is the other side of the dice.

These two types of equality bring into question the nature of games. If we must have a greater than or less than, there can be considered true winners, in which case there should be true losers, but this is prone to the game we consider. This abstract question of true losers and winners is not as simple as it first seems, but it is not deceptive. The implication is that there exists one inherently because of the other, but without one, for instance the winners, may there be another? It does not seem so. I would suggest that we examine this question from the perspective of empty in the sense of hollow odds.

For one, with only two types of participants there is an equality of two kinds. There is equlity in the given to and in the from. For instance, we may have apportionments of 7, 23, and 30 qualuts to be interchanged among three. If each in each of the three categories deliver these amounts to each of the others in a circle, among three levels, then we have 30, 53, and 37 given to each. When we have equality in the amount from each to each within each level, and on the level of a total amount to each, we arrive at 60 traded, with a plus and minus, and we have all in a single different level of equality. This can be different than a single number for two reasons, one, we have the amount traded from left to right, and an amount from right to left, and two, we have the amount incoming and the amount outgoing for each, before a trade is made.

These types of equality are different, for each is equal in giving to each of the others, and each is equal in accepting from each of the others. These are different, because together they create an opposite of motion of a net amount. For the from people definitively we give from each of these ten each to one. If we do this, the latter are in equality as froms. We can have different amounts to understand this, as each has a from and to. If we give ten qualuts each back from each of ten to one, then we end up giving one hundred to each, and each of the latter are in equality in their acceptance in a from relationship.

This equality with two members is for the from and for the to, because they may differ in their equality of amount, with other neighboring groupings, which may give less or more. The end definition of amount although being a single

number comes from two interinvolved sources. These are definitely different types of equality, as one pertains to the from party, while the other is for the to party. We also have words that pertain to all of a group, or one member of a group, have equality, and yet are not equivalent tenses.

With this notion of equality, this edge, we have a pathalogical case, for we have no true winners or losers. But simply the intermediate state of blindness within the equal parties as these are to one and the other, lends the idea that one alone can be neither. We can of course have games with no true winners or losers. But, when we automatically have these we can still have the scenario of true winners with no true losers. There are at least two cases which may not escape inspection.

One, is the game with an infinite number of players. The second case, is one where the rules expand endlessly in a teir like system that builds upon itsself, and that while not dethroning winners, can produce a game, as an evolving game, wherein given the rules change we have an ellipsis of greater magnitude, retallying a person to another somewhat lower but not empty intermediate level. With multiple levels to this heirarchy, we find that there are two new complimentary types of the aspect of game.

There is innovation of game, and conservation of game. Retallying and accrument come later, and intermediately. From this, we can see that although the odds may be based upon probability, if one were to ask a question based on probability, with theories going into ever escalating cascade of meaning, that there are ones where a person is pulled back from the threshhold of winning, or unwillingly pushed through to new grounds where the old rules do not hold, with completion.

In the comprehensive view of games therefore, there are new and innovated ways of defeating an opponent wherein the lowest loser can be propelled into infinite circumstance only to defeat those upon the top. This can be a dramatic and inspiring experience, but it is unusual, and not common. It is that we do not base statistics on the outliers that we lose this vision by self occlusion and a loss of understanding of experience from the tried and true, the used to, and the germain.

The biggest question in all of logic appears to be, why does it divide into what seem to be two, endlessly in a form of duality? I believe it only appears

to divide into two at each step, and does so because of our initial and primary differentiation as comprehendable by the mind seeking to divide. When we slow down, we realize that there is no sense of place nor division outright in logic. That it is complete in every statement and comprehensive as a whole in such a way there exists no break or division. With this, duality itself cannot really be explained, but it is always a contest to divide in a logical tree. However, when we divide we find the parts inhomogeneous.

Part of this reason is reference itself, which is a relationship that has to do with parts so conceived. If there were only one part, logic would have an end, and it does not. I believe that this inability to conceive beyond duality has to do with its continual moving out of one into another, in tandem, needing two parts for a complete picture, for there could exist no truth without falsity, no falsity without truth. With this, each in its essence is contained in the other by virtue of its existence.

Beyond this we find a new notion for number and word, which is that of symbol. However there is another. We find that while symbols are absolute in their involvement within logic, numbers are within the theory of mathematics, and words are ever expansive, there is a fourth notion that contains all three. This is a very primordial concept generative of components of the concepts or notions of number, word, or symbol, and is a notion of a symbolic and word generative number or series. A notion of quantity enters the picture, and yet there is a quality these things possess, and not so much a quantity. A quantity does however come along for the ride. Number is associated with quantity, word is declarative of meaning, and symbol of generative notion. This fourth is associated with placement or representation, or interinvolved motion.

With this we can explain in less than arcane symbolism the notion of a relationship or operation, and one of a non-symbolic representation of action to be taken between two things, without the constraint of having a boundary of one or two objects so as to represent action to be taken between, and free of the constraint of having a definite number of participants. So too, to that which represents the interaction freely between one or many of a thing, and without a definite declaration of absolute nature, but of the nature of a mathematical motion. This is wholly inclusive of the normal operations of arithmetic, and aside from that of a symbolic statement with a definite rather than diffuse application. It is completely free of the from and to relationship, and instead,

is an "as it applies". These are parts of statements, with an isomorphism between structure, application, and movement. These can only be described as wholly independent but representationally secure affixes.

With this the three rules of structure, flexibility, and definiteness are intact within mathematics. These appear to be somewhat missing from mathematics. With these we do have completeness in every statement, without a literal application of knowing. One such thing to be considered as such most completely is the operator "exists". These type of qualifiers complete the language of math, and nearly are the same as "variable". With these the notion of an augmenting operator is complete, and what one gets is algorithmicity, and a flexible prototypication of meaning from an outset, where the notion of motion is included on a base level within mathematics. With these, our search for new notions of math is wrapped up into a compact unit.

This new notion of that within the same category of (symbol, number, word) is generative of the true nature of question and the tranformation of what is.

Fractalline Logic

Let us now consider fractals of logic completely with a few words. These objects are complex and entrained. However they may exist, and yet are truely implicative of a new order to logic, yet are not containable in fullness, and this is frightening to the logician. I would suppose that these work or would as systems of logic, but they have no clear boundary, and hence are with an infinite string at their boundary, which slices them in two; their inside and outside.

They are still prone to boundaries that pertain to their system. But since they have no clear boundary we cannot always differentiate their truth from falsity, and hence in their limit they can not really be said to contain the truth, and instead collapse at the union between their space and ours. At this union they fail to hold true, and since they are not entire, they collapse into a flat union of their own meaning, grey or silvered and with strange overtones, these leave nothing of completeness in their generations, and are empty inside. If you take them as starting somewhere you cannot reach the other side upon them, and consequently they seem undefinable, but are truely a total abstraction.

If we were to look inside one we would find them not empty but appearing

so from outside, and together they are potentially mutually or self negating. Here is the place of regression and self referentiality. Such things only exist with time flowing to the future, and hence they are something of an expansive realm of logic. Icy cold and like slivers from an infinite darkness, or soft and serene like coral, although their boundary is not defined, they do contain truth, yet we cannot perceive it outright, and we can only once in a while find a way to stop such things and momentarily examine their truth.

However, they have no union of truth, and no circle fits inside them, so they are frozen, and from this, containable. These are conflictory types of logic, and lead to problems in integration on a conceptual level, but as an example consider such a coastline of logic. It never ends, and has no beginning. These however do not lead to circles. They can be understood as types of logic with a modicum of self supporting statements. I do not believe them freestanding. They have primary attributes, but can be divided only one step beyond the first premise. From here, they vanish.

These can be closed, if the boundary is taken to be their outside, not their initial start, and their sides are taken to be from out of logic, into subjectivity, where they ebb out into their own boundary of without existence. If they were pure boundary and the truth were not defined, then they would not exist within reality, but within the mind, and are genuinely empty. These fractals of logic are but a dream as a memories reflection and one in the same as an infinite recursion of meaning.

The trick to a new system comprehensive of logic incorporative of this system of understanding would be to devise a fractal system of logic that never gets stuck in itself, but instead flows freely to new suppositions of a nonconstrained geometry where we have also new forms as these exist as one and the same, and as pieces of a common puzzle with the many types of existant geometry. This tie has not been explored, but in one way it seems. A geometry with reason, but also an underpinning of the imagination given solid structures of logic.

Given the prevalence of the circle in fractals however, we can have an open and flexible boundary enough that it extends from the circle inwards to surround a given fractal and tame this creature. It would however need to have but one truth to it, which is that of a solid structure and consistency of interconsistency even wherein the boundary appears to change but does not. These grow inwards

rather than outwards, and are contained really only in themselves or others of their kind.

One would think we would need an extra element of logic to understand these, however it is but an openness to infinite regression, contained only in itself and complete as a given object, of infinite variety, closed and open at the same time, only so can many mixed boundaries exist. If you would consider a fractal of logic to have within it an element of paradox you wouldn't be far from the truth. We must note in this that they do not cross, but instead are abbute to their own self nature. These end only inside themselves, and so are as a given containable. Neither there on the inside or the outside, but flatly on the boundary continually, these parts never cross the space between, but instead move back and fourth or around, with some number infinite but of a sequence, common in its outside, but never in its absolute inside.

Can we say these have an inside or just many fibrous ends, as if from some other space? They do not, but instead as we pass across their surface we understand something else. Their infinite regression and the container being on the outside, leads to the implication that their mixed open and simultaneous capacity to contain infinite open regression are a part of a common whole of reason that leads to the understanding that their postulates go perpendicular at some point. We have emptiness within the boundary, but it is not present, so we do not need it on the edge, and instead, we find the bubbles of reason contained within one are completely intercompatible, and interconnected within each other, as a complete picture contained in the recipe on the edge, with but one starting location nowhere to be found.

Extension into another dimension is impossible, as a limiting character, but is flatly round and roundly flat. Interinvolved they are, but one to one, one cannot find an end in sight. What theorem would this be but extension of the disc or the circle warped into itself, as it transgresses across the plane and becomes infinitely self embedded in its future pretence, as reasons contained in an ocean of sea froth above depths of the deep undersea below them. Sometimes, their reasons are contained here.

These may seem akin and in concordance of creation with irrational numbers of the nature that we may ask an interesting question to relate this theory to that of numbers. For which numbers or sequences is the mutual truth state-

ment of relatedness of among an entire set, in a relational manner, capable of generating a non infinite and non zero, irrational number from a simple sequence, and what are the types of numbers as such called and so created? We search here with this for a tie between logic and numbers, as open as that of a single number for a single sequence.

These together imply a new order of logic, which is still understandable by logic itself, but incompatible it seems with truth and falsity, and as these work together, one and many of the same forms, as these work together and peacefully do integrate into common concepts, like a mist evaporating before the eyes. They do not contain themselves only, but new things, unheard of, with infinite complexity. Their branching of logic must be seen as actually of the most articulate and common sensical, misplaced and within reason, flatly aware of its own emptiness, and yet full of its own container and only this. These must come in more forms than there are description.

Yet they are there, infinite in the many and many in the one in their description, they are both contained within and subtend all description, beyond the most scrutiny of mathematics and the finest comb. They are there to remind us of the awe of nature, and the pieces of the true logic in all its forms as these are compatible with a description truly beyond words. If we could measure them, we would find our standards met, but to meet what would be the question but another of the same kind, as each is infinitely unique and yet, they also have no common ground. If we bring many together, we may even find them contained in the other, and with this, we have a nature of new completeness, unheard of before.

I would not know where to begin with nurturing these new elements of logic into being, but there is a place where these exist, at first hand; the imagination. And it is here, we find their new systems staggering in complexity and understanding. These together remind us of our frailty in understanding even such things as these. Being caught in one could be a danger to any, however they are each one unto the other things which do piece together in such a way that they are simple at first sight and difficult once reasoned with, and mutually instantiating yet imperceptibly different, and caught together in a spiral of reasons, where searching leads one down neverending passageways, never to return to that place first understood as the origin.

This sentence, this paragraph, and this paper may seem like one such entrance, but it is not so much an entrance but an exit, not into but out of that realm before one may realize these things into a new place where understanding of such things is possible and open as a new realm to be explored.

One should begin to understand these with a ruler and compass, or by sketching the lines drawn on a face, or the coastlines of a continent,... the wrinkles in time from a billion trillion trillion bubbles of sea froth, slowly drifting up the beach onto sand slowly and surely turning over every grain in its wake.