THE ELEMENTALS

A work on the philosophy of logic (1980)

This is an attempt to view the most basic and fundamental part of modern logic from a perspective which shares no grounds with any established schools of philosophical logic, in that the truth and falsehood as judged by means of human interventions is denied and the notion of logical dimensions is introduced. It establishes the minimum irrefutable logical structure and proceeds to found the relations between logic and geometry. The description of symmetry creates and simultaneously constrains the logical structure, whereas symmetry itself can only be postulated.

What really symmetry is, is a riddle of the intellect.
Please think of it for at least one hour before you open this book.

T.IWAMOTO

‘If God gave me a voice,
I’d sing for ten years,
and then go into a monastery’

Maxim Gorky

from ‘My Childhood’

CONTENTS

I. Atomic Symbolic Form

1. Condition : Only that which is understandable is describable, and vice versa.

1.1. Postulate : There is such an entity, FX, without which the above condition becomes referenceless and thus fails to claim its own truth (i.e. raison d'être). The existence of FX makes possible its being postulated, and its being postulated is the sole condition which allows for its descriptive possibility. This entity FX is generated within a space in which the above condition insists on its own validity. FX therefore cannot be sought for in relational juxtaposition to the so-called external world because there is as yet no such world. FX is a condition which generates the world of its own. Such a world is a notational space in which the most fundamental understanding can hold. The above condition and its postulated entity necessarily depend upon each other so that each can exist (i.e. be meaningful). They do this by creating an environment such that in it only they can exist. Such an environment is the space of mutual-representation. The two mutually represent each other in order for each to be meaningful.

1.1.1. Ontologico-notationality : FX is ontologico-notational. What exists ontologically must also exist notationally, and vice versa. Ontological limits are therefore also notational limits, and vice versa. Two worlds are therefore one and the same. What is the most fundamental entity in one is also necessarily so in the other. If the world is to be understood only descriptively, then whatever is descriptively understandable it is also existent. That is, what is describable is also existent. That which is postulated in order for what is describable to be possible, must also be postulated to exist. This makes what is existent possible. Therefore the most fundamental notational unit is postulatedly also the most fundamental entity of the world.

1.1.1.1. The atomic symbolic form is the necessitation of the descriptive justification of the above condition. Therefore it is the atomic symbolic form which generates FX, and it is FX which justifies the existence of the atomic symbolic form. This justification is done by demonstration.

1.1.1.1.1. What makes it possible to 'appreciate' such a demonstration is the fact that 'I' am 'myself' also FX. 'I' am, so to speak, demonstrating 'myself'. Therefore the 'appreciation' of this demonstration lies in 'my awareness' of 'my' construction of the world. Whatever 'I' may construct, that is the world. The understanding of 'I' is the world. This 'awareness' is the necessary fact of 'my' self-participation in the world.

1.2. Anti-postulates : From the above condition the following three possibilities of refutation arise :

(i) There is some such which can be understood without any kind of description, and it can also be known to be understood.

(ii) There is no such which can be understood with or without description of any sort.

(iii) There is some such which can be described without any kind of understanding.

(i) can be valid if and only if it is demonstrated in a manner which can be understood without the intervention of a description. If (ii) is valid, then neither that description nor any attempt to disprove it can be meaningful ; for there would be no knowledge. For (iii) to be valid it would have to be demonstrated, and this would have to be done without the involvement of any understanding that it was done.

1.2.1. If these anti-postulates do not hold, then it can be claimed that the postulate implies an entity which is describable and understandable simultaneously. This is so because what can be described can also be understood, and vice versa.

1.3. In general if there is a condition, and if there are no entities which fall under it, then that condition is null. A null condition is meaningless ; for it cannot descriptively justify its own validity. A condition that cannot claim anything for itself cannot be understood. The description of a condition consists of a demonstration which is given in terms of the description of an entity

which falls under it. This description is based upon properties of that entity.

1.3.1. The validity of a condition can only be demonstrated. A condition can be demonstrated if there is an entity which falls under it. A condition which is unable to have such an entity cannot be demonstrated. A valid condition is therefore necessarily demonstrable, and a demonstrable condition necessarily has an entity which complies with that condition. A condition whose validity can only be postulated 'conditionalizes' an entity in order to demonstrate its own validity. The properties of a conditionalized entity are therefore the meaning of that condition. An entity by which a condition is to be demonstrated is only assumed in order to describe the validity of that condition.

2. The meaning of that initial condition is as follows :

(i) Anything, if it is to be understood, it has to be described.

(ii) Anything, if it is to be described, it has to be understood.

(iii) There is something - whatever it may be - which is describable and understandable.

2.1. An entity, as postulated above, has no contingent properties. It only has necessary properties - whatever they may be -, and it has these properties only essentially. 'Essentially' is meant in the sense that if this were not the case, the very condition would nullify itself. It is - in whatever way it may be - essentially only in itself.

2.2. The sole condition of the entity FX is that, from the initial condition itself, it can only be postulated to be in itself. This is so because FX must exist - postulatedly - prior to any description or understanding. It can therefore only exist in itself. Being-in-itself is its only property. Anything that is essentially in itself is descriptively something.

3. FX can only be in itself. Consequently, the property of FX is essentially that it has no properties which can be described. FX is only essential and is therefore only to describe. This can only mean that FX is necessarily to describe itself. This is also the same as saying that FX has every possible property to describe and, therefore, to be described. FX generates contingent properties while it demonstrates itself. A contingency lies in a possibility that a same entity can be described otherwise. Therefore, a contingent property is merely the arbitrariness of a description which is allowed within the constraint of a notational space. A notational space is conditionalized from FX.

3.1. FX is essentially to describe. Therefore, it can only demonstrate itself.

3.2. FX cannot be described by concepts or by any other contingent ways.

3.2.1. If what is referred to by a proper name or referring expression is a set of descriptions, then FX is what makes such a set unique.

3.2.1.1. What is referred to by a proper name or referring expression cannot be understood on its own ; for in this way the world would be merely a collection of independent entities. Independent entities cannot be described, but are only to demonstrate themselves. The world as a mere collection of independent entities therefore cannot be said to have been described. Proper names or referring expressions are meaningless on their own. Their meaning already assumes a total descriptive convention to which they are coordinated as parts. The understanding of proper names or referring expressions necessarily involves descriptions in which they are a part. Therefore, what makes a proper name or referring expression unique is a way by which it is apprehended. The uniqueness - right or wrong - of a proper name or referring expression lies in a set of descriptions which is associated with that proper name or referring expression. The uniqueness of what is referred to by a proper name or referring expression lies in relations between what is referred to by that proper name or referring expression and what is referred to by every other proper name or referring expression. Or it may turn out that there is nothing really to be referred to by a proper name or referring expression, and therefore that a seeming uniqueness is only a complication. In the former

case FX is what causes such relations. This is so because only by a relation - whatever it may be, and including self-relations - an entity or entities between or among which this relation holds discerns itself or themselves uniquely as what occupies a definite position(s) in the epistemological space of understanding. In the latter case a descriptive device in which such proper names or referring expressions are used is defective in its ability to describe the world and serves for some entirely different purpose. In such a case if the language deployed here is not a theoretical one, which is especially constructed for a certain intended purpose, but after all turns out to be the same as the latter one, which is usually and vaguely understood as the so-called ordinary language, then it is not bringing out any truths, but appealing to the truth that everything is FX, by the very existence of itself and therefore by its being so recognizable as an existence.

3.2.2. If a predicate stands for a category, then FX is what makes a category unique.

3.2.2.1. A category, f, of any orders other than the maximum and minimum ones, which cannot be described, but are to demonstrate themselves, is a descriptive device to organize and arrange entities, x's, in order to describe the so-called world. x's are not themselves descriptively existent, but are supposed to be juxtaposed somewhere outside a language. However, such a f is in no position to command certain x's so as to put them under it. Both a f and x's assume something which relate them to each other in some unique way (i.e. something which associates a certain f with certain x's). Without this something there is nothing which enables a certain f to bind certain x's under it. FX is - whatever it may be - an entity which is assumed to exist not only between certain f's and certain x's but also between f's and x's in general and command them in a certain way so as to allow not only f's and x's but also f's and x's in general to be related to each other. In this context FX is a postulated fact that f's and x's need to presuppose a certain unity between and beyond them. What binds f's in general with x's in general is the ontologico-notational FX. What binds certain f's with certain x's is the epistemological FX. The demonstration of the former FX gives rise to the logical space, from which the latter FX is conditionalized. The maximum and minimum f's are meaningful if and only if they are so demonstrable as to show their relation in such a way the entirety of the former is constructive from the latter. There is nothing by means of which they can be described. Consequently, they are to describe themselves and therefore stand for a meaning which is identical with that of the initial condition.

3.2.2.1.1. If it is thought that categorizations are done by a 'thinker', then this 'thinker' itself remains a mystery. In this context this 'thinker' completely fails not only to describe and understand what 'he' calls the world but also to apprehend what 'he' is doing. This is more or less the history of philosophical thinking.

3.2.2.1.2. Assuming, for the sake of simplicity, that an entity is described and understood in terms of categories of any orders, in such a way that fa, ga and so on (i.e. that there is one and only one x such that uniquely unifies f, g, etc. as a set, and that it is named a), then it is illustrating but misleading to speak of depriving a of f, g, etc., so as to show that a is in fact an indescribable x, which is FX. This is so because in such a case it suggests as if there were some 'operator' which did this 'depriving'. However, it is this x that descriptively precedes anything but itself. If FX is postulated as what gives a set of categories or descriptions a uniqueness, then it cannot be 'operated', but is to manifest itself by demonstration ; for, otherwise, such an 'operator' itself would remain a mystery. No mystery is a sound description of the world.

3.2.3. If anything - whatever it may be - can only be understood through descriptions, then FX is what ontologico-notationally constitutes anything that is described.

3.2.3.1. If a description is possible, then there must be something - whatever it may be - to be described. Such a something is FX. Anything that is describable is something.

3.2.4. If anything - whatever it may be - can only be described through understanding, then FX is what ontologico-notationally constitutes anything that is understood.

3.2.4.1. If understanding is possible, then there must be something - whatever it may be - to be understood. Such a something is FX. Anything that is understandable is something.

3.2.4.2. Anything, if it is so discerned at all, is essentially something (i.e. something which can only be postulated so that such a discernment holds based upon understanding and descriptions).

3.3. FX, being essentially only the essence, cannot be described, but is necessarily to describe. Such a description is a demonstration. Only by demonstration it can be shown that certain properties essentially belong to a certain entity - whatever those properties and this entity may be. FX is, so to speak, the form that something - whatever it may be - essentially belongs to something - whatever it may be. This form, if it is valid, postulates itself to be an entity such that satisfies the very form which it sets for itself. The property of such an entity is only 'being-essential'. Such an entity is the subject-matter of understanding and descriptions.

3.3.1. FX is, so to speak, the form of the subjectified object and objectifed subject. This form exists where neither of a subject and an object ontologico-notationally precedes the other. FX is necessarily ontologico-notational and therefore can be, on one hand, an entity and, on the other, a form. If it is an entity, it has the property of being-essential. If it is a form, it is a condition of its own.

3.3.1.1. Ontology must be describable. Whatever is described, that is an ontology. The most fundamental ontological entity and the most fundamental notational entity are postulated to be one and the same. FX stands for this. The demonstration of FX therefore manifests the world itself.

3.3.1.1.1. There can be no such as 'I'. 'I' am also FX and can only be FX. The world is the demonstration of 'I'. The world demonstrates itself by itself, for itself and of itself.

3.3.1.1.1.1. Where there is no demonstration, it is postulated that there can be no world. It is also postulated that a demonstration cannot be demonstrated to be demonstrated. If there exists the world, then 'I' must be already and always demonstrating itself, and therefore cannot be spoken about ; for 'I' am the world. Only a theory of essentialism such as this need not concern itself with 'thinker', which is always used without being justified in any theories of whatever. 'Thinker' or 'I' can only be the subject of a whole discourse and remains implicit because of its indescribability. A whole discourse is the demonstration of what appears as 'thinker' or 'I'. Therefore, such a phrase as 'I think - - -' is meaningless in the very discourse in which 'I' am the very 'thinker' of discourse. 'I' - whatever it may be - can only be the most fundamental entity of a discourse. 'I' am to conditionalize everything else from itself so as to demonstrate itself.

3.3.2. Whether the notion of a conceptual function is adequate or not in order to describe the world, it is not an analytic notion but a synthetic one, which is itself beyond any conceptual or theoretical analyses. What stands for a predicate-letter already presupposes what stands for a variable-letter, and vice versa, while the necessity to unite the two remains itself unexplained. FX is, so to speak, the form of the notion of a conceptual function and, indeed, of every other notion. This is to say that for any notions to be possible there must exist some entity - whatever it may be - of which some property - whatever it may be - is essentially constitutive of that entity. Such a property is indispensable if any description is to hold. Whatever is described, it is either to demonstrate itself on its own and by itself or, otherwise, to be described by some descriptive device which is conditionalized from such a demonstration and by what is demonstrable. In the latter case if any description is to hold, what to be described and what to describe - whatever it may be - must be so related to each other. They can be so related to each other if and only if there is something - whatever it may be - which is referred to by both what to be described and what to describe. Such a something can only be postulated to be essentially in itself. This something is shared by both what to be described and what to describe and therefore necessarily unites them. Without this something nothing can be sure of itself, and therefore no description can be certain of itself. This something ontologico-notationally generalizes symbols of all sorts and is called the atomic symbolic form. It is also an entity which is postulated to be the most fundamental ontologico-notational unit and from which everything is ontologico-notationally conditionalized.

3.3.2.1. The only property of FX is that it cannot be contingently described ; for it is the general form of symbols, and not of a certain symbol. FX can only be postulated to constitute itself. In this sense FX cannot be described, but can only describe itself. Such a self-description is a demonstration and is based upon what is postulated to be the property of whatever that self-describes (i.e. of FX). This property is that of being-in-itself and therefore of being-essential. Consequently, the subject-predicate form does not hold in the description of FX. FX is itself a subject as well as a predicate. Such descriptions that e.g. 'FX is one', 'FX is independent', 'FX is a self', etc., are all meaningless.

4. Logic is a description by essence. FX descriptively manifests itself in terms of its property of being-in-itself. Such self-manifestation is necessarily an essential description and gives an essential understanding. Logic can only be demonstrated.

4.1. The demonstration of FX constitutes the most fundamental understanding. Everything is conditionalized from FX. Every schema follows from the ontologico-notational demonstration of FX. Logic is the schema of schemata and is therefore the most fundamental notation.

4.2. Descriptions and understanding can only hold in what can be condionalized from FX. Every other descriptive device, including the so-called ordinary language, is either accidental or, in fact, non-descriptive, and therefore can only give an accidental understanding or nonsense.

4.3. Philosophical understanding consists not in a set of accidental understanding or nonsense but in an essential understanding ; for any accidental understanding can be otherwise. If an entity is described based upon properties which do not essentially belong to that entity, then the description of that entity has no guarantee to be necessarily such and such.

4.3.1. If there exist essential properties, then whatever they may be, they cannot be distinguished from the form of understanding. This is so because whenever they are present in understanding, they are necessarily so present based upon a principle of description such that an entity can only be essentially described in terms of its essential properties. Therefore, if something is described necessarily as such and such, then it is also understood necessarily as such and such.

4.3.1.1. Essential properties - indeed whatever they may be - cannot be described. This is so because if some property is essential, then it cannot be descriptively distinguished from an entity to which it essentially belongs. An entity is descriptively identical with its essential properties. Therefore, if an entity is described in terms of its essential properties, then such a description descriptively only amounts to a mere claim for some indescribable existence. It therefore cannot be regarded as a description ; for it does not tell anything but the existence of something. Such a claim can only justify itself by demonstration. Essential properties - whatsoever they may be - can only be postulated to be 'being-essential' and therefore amount to one and only one demonstrable property. The demonstration of FX proceeds only by making use of this property.

4.3.1.2. If all essential properties are postulated to amount to one and only one demonstrable property, then the demonstration of FX must be able to give rise to a descriptive device which can give the descriptive account of those essential properties. That is, the demonstration of FX must be able to generate schemata in which an entity can be essentially described. Such schematic descriptions would appear as if an entity were described in terms of essential properties. However, every such description already assumes a whole schema to which those seemingly essential properties belong as the properties of that schema, and not of an entity. This is so because these schemata are themselves conditionalized from FX, based upon this demonstrable property of FX. Whether it is ontologico-notational or epistemological, the subject-matter of every description is FX. This is the meaning of a description. That is, the demonstration of FX gives rise to schemata in which whatever may be described, it can be again postulated to be FX. FX conditionalizes schemata from itself, and a schematic description assumes a whole schema in which it exists. Consequently, without a schema no schematic descriptions can be meaningful. The postulation of one and only one demonstrable property from essential properties can be justified only demonstratively and therefore gives rise to schematic

descriptions. In this sense every essential property is necessarily schematic.

4.3.1.3. FX describes itself by itself, for itself and of itself. The ontologico-notational demonstration of FX constitutes logical descriptions and gives rise to the schema of logic. It is also the basis of the epistemological demonstration of FX and conditionalizes every other schema. Therefore, while the subject-matter of a logical description is directly FX, that of an epistemological description can be FX only indirectly ; for an epistemological description exists in a schema which is conditionalized from the schema of logic. The descriptions of an entity in terms of numbers or space-time belong to the latter. Without some schema numbers and space-time are descriptively meaningless. They are schematic essential properties.

4.3.1.4. The ‘proofs’ of the consistency and completeness of a schema are, if they are not a demonstration, artificial in the sense that they presuppose something outside a system whose consistency and completeness are intended to be ‘proved’ by them. Such ‘proofs’, if they are not accidental, remain unjustified. This is so because they are made possible by some ‘operator’ which is capable of contemplating and manipulating a system outside that system. Therefore, not only this ‘operator’ itself but also whatever that is deployed by it (e.g. the notions of the truth and falsehood) remain unjustified in those ‘proofs’ as well as in a system for which those ‘proofs’ are intended. Such ‘proofs’ are not a part of a system for which they are intended. It is this ‘operator’ itself that must demonstrate itself. Consequently, its non-demonstrative use can never be descriptively justified.

4.3.1.4.1. The ‘proofs’ of the consistency and completeness of the classical two-valued logic are based upon the system of the notions of the truth and falsehood and the system of the rules of inference without a reference to the necessary and sufficient conditions which necessitate a certain relation between those two distinct systems. Therefore, such ‘proofs’ are themselves just another distinct system which cannot justifiably claim its intended raison d’être. The necessary and sufficient conditions for the unification of those two distinct systems are an ontologico-notational relation which holds in and among the system of the notions of the truth and falsehood, the system of the rules of inference and the ‘operator’. They are all ontologico-notationally one and the same ; for they are all to be conditionalised from FX.

4.3.1.4.2. Only FX can demonstrate itself. This can be seen in this demonstration because everything can be conditionalised from FX. This also means that FX makes every ‘proofs’ superfluous or at least justified. Consequently, neither ‘axioms’ nor a contemplating and manipulating ‘operator’ need to be taken for granted.

4.3.1.4.3. ‘I’ - no matter what it may be - demonstrates itself based upon its demonstrable essential property. The description of such an ‘I’ constitutes logic. Logic is the way in and by which ‘I’ discerns itself. The truth of logic is its existence. The validity of such an existence lies in the fact that it is demonstrated.

II. Logic ; The Ontologico-Notational Demonstration of FX

II - i. Modes

1. Modes are the necessary ways in and by which FX discerns itself in terms of its own essential property. FX discerns itself as an entity necessarily in terms of the property that it is in itself. Modes are the necessary ways of such self-discernment. Modes are the description of something, or they are themselves meaningless.

1.1. In order to describe itself FX is descriptively required to quantify itself. This is so because FX is a postulated entity with the postulated property of being-in-itself. Modes are the forms of self-quantification. This is a self-description and is therefore ontologico-notational ; it is not a mere description but a way of existence. FX exists by describing itself.

1.1.1. FX is itself a universal entity of which the universality is essentially due to the ontologico-notational fact that it is a pre-descriptive, postulated entity. Consequently, it has no contingent properties and is universal in the sense that nothing can descriptively precede it. Therefore, if FX is to describe at all, then it can only describe itself. Such a complete self-description of FX by FX is called a demonstration. FX demonstrates itself by describing itself. That is, FX is universal because there is nothing else to be described but itself. Such a self-description is an existence.

1.1.1.1. FX is necessarily a describable entity which is postulatedly the most fundamental notational unit. It is an entity which is postulated from a condition which specifies that for anything to be understood it must be described. Therefore, if FX is to be describable so as to be understandable, and if FX can only describe itself by itself, then its innate necessity to demonstrate itself must require FX to be a quantifiable entity within its own demonstration. A condition binds its postulated entity, and unless FX is a self-quantifiable entity, no descriptive measures can be taken. This is so because in order to describe itself it must be able to demarcate itself from itself so that it can ‘see’ what is being described (i.e. itself as itself). Therefore, the postulated, pre-quantifiable entity FX, in describing itself as required by the condition from which it is itself postulated, becomes a quantifiable entity by the very self-imposed necessity of describing itself. There can be no such as a quantifiable entity in itself ; for FX, in describing itself, is itself described. The notion of a quantifiable entity is therefore essentially descriptive. Anything, if it is describable, it is ontologico-notationally and postulatedly based upon something which is essentially in itself. Therefore, anything, if it is described, it cannot be itself FX. It can only be something which FX constructs from itself. FX descriptively manifests itself in and by modes. The described FX (i.e. FX which is self-quantified) and modes are inseparable. Without modes FX cannot descriptively present itself. Consequently, whenever FX is descriptively present, it is necessarily in and by modes. This means that FX and its property ontologico-notationally transform themselves into a quantifiable entity with its modes. Modes are the descriptive form of a quantifiable entity. The postulated entity FX, in discerning itself in terms of its property, becomes the described FX. Such FX is a quantifiable entity.

1.1.1.1.1. The ontologico-notational transformation of FX as a universal entity into FX as a quantifiable entity, is essentially due to the ontologico-notational fact that it is a postulated entity. This is so because for anything to be postulated there must be something from which it is postulated. The validity of what is postulated (i.e. FX) can only be demonstratively seen if and only if this something can be deduced from this postulated FX. This deduction is a demonstration and is the self-description of FX, based upon its property. The initial condition (i.e. I -1) is not itself this something from which FX is postulated. The initial condition is only an unjustified descriptive claim for this something and therefore requires FX in order to justify itself. The demonstration of FX is therefore the description of this something as well as the justification of the initial condition. Such a something is the most fundamental ontological entity which constitutes the world.

1.1.1.1.1.1. This demonstration proceeds only based upon the innate necessity of FX. That is, FX necessitates itself to describe itself. The above mentioned transformation is therefore an

ontologico-notational procedure which is necessary in order to make it possible for FX to descriptively manifest itself. A quantifiable entity, if it remains undescribed or is in itself, it is the same as FX as a universal entity. FX is an entity which is postulated as the outcome of the generalization of every description including self-descriptions (i.e. existences). This means that the demonstration of FX is a self-description which shows what descriptions are. Therefore, the postulated universal entity FX, in describing itself, necessarily transforms itself into a describable entity.

1.2. In order to be describable an entity discerns itself by demarcating itself. It is an existence with locality. This locality is generated by such an existence itself. Modes are the descriptive form of such locality. This self-discernment is not the drawing of a line between something and every other thing in order to make this something a distinct existence ; for a discernment in this sense presupposes more than just that something and every other thing, namely the 'drawer' of a line. This self-discernment is to make it possible for anything to establish itself by itself as an existence. This is done by a self-demarcation. The self-demarcation of an entity generates the locality of this entity.

1.2.1. This discernment is not a spatio-temporal differentiation, which already assumes something else (i.e. a schema) besides a very existence-to-be-discerned. Such as space-time and numbers are yet to be conditionalized.

1.2.2. A quantifiable entity is the only entity which discerns itself at this stage of demonstration. Ontologico-notationally there can be one and only one such quantifiable entity ; for it is the outcome of the transformation of a universal entity. If a quantifiable entity appears multiple, it is necessarily because of modes. In such a case a same entity is required to multiply itself by its own necessity of describing itself. Modes are, in this context, the descriptive form of FX and are based upon the essential property of FX.

2. The property of a quantifiable entity is that this entity demarcates itself from itself and by itself in order to discern itself as an existence. Consequently, the ontologico-notational necessity to transform an entity from that with universality into that with locality necessarily brings out the describability with it. While FX is a postulated entity, a quantifiable entity is a describable entity. Nothing is describable unless it can confine itself to itself. That is, a symbol can have one and only one definite meaning. Therefore, if the initial condition is valid, then FX is necessarily an entity which can demarcate itself from itself.

2.1. A quantifiable entity is describable if and only if it is also an entity which consists in and of two mutually dependent constituent entities. What to demarcate and what to be demarcated mutually depend upon each other in order for each to exist. Nothing can be demarcated unless there are both what to demarcate and what to be demarcated. Consequently, a quantifiable entity must be made of such constituent entities ; for, otherwise, a quantifiable entity is, contrary to the initial condition, not describable. This internal structure of a quantifiable entity is therefore an ontologico-notational necessity. The description of a quantifiable entity lies in the description of this internal structure. The property of those two mutually dependent constituent entities is necessarily their own relation to each other, and nothing else. This is so because such two constituent entities are descriptively required for the describability of a quantifiable entity. Their relation is therefore the descriptive property of a quantifiable entity.

2.1.1. If there exists a quantifiable entity, then there necessarily also exist two constituent entities with their relation of mutual-dependence. Such two entities are required by a descriptive necessity which makes it possible for a quantifiable entity to comply with the initial condition and therefore to become describable. A quantifiable entity without such constituent entities is the same as FX. FX conditionalizes a quantifiable entity from itself so as to comply with its own self-imposed self-describability. If a quantifiable entity necessarily consists in and of constituent entities in order to be self-describable, then such constituent entities are necessarily two and only two and are also mutually dependent ; for, otherwise, contingencies could come into the description of a quantifiable entity.

2.1.1.1. If there were only one constituent entity, then a quantifiable entity would be descriptively the

same as FX and therefore would be yet to describe itself. This is so because a demarcation, including a self-demarcation, is necessarily a polynomial relation. Consequently, with only one constituent entity nothing can demarcate itself from itself. If there were more than two constituent entities, then the description of a quantifiable entity would contradict the initial condition, which it was to demonstrate. This is so because in such a case there would be more than two sets of relations which hold among constituent entities. This means that there would be more than two descriptions of a same quantifiable entity. This, however, would allow the existence of something which could be neither describable and understandable nor demonstrable ; for there can be nothing which is descriptively more fundamental than those constituent entities. That is, if there were more than two sets of relations, then there would have to be a relation or relations such that would hold among those more than two sets of relations and put them together as a single set. Such a relation is indescribable. A quantifiable entity would then fail to describe what necessitates to relate or connect those more than two sets of relations which hold among its constituent entities and therefore would also fail to describe its wholeness as an entity. Therefore, the description of a quantifiable entity would also fail to show what necessitates to relate or connect those more than two descriptions. If there is nothing which relates or connects those more than two descriptions, then it cannot be known if they are the descriptions of a same quantifiable entity. This amounts to say that constituent entities can only be two and that their relation can only be that of a mutual-dependence and is binomial. Therefore, a quantifiable entity, if it is describable, it necessarily consists in and of two and only two mutually dependent entities. Such constituent entities have no properties other than their own relation ; for they exist only to make it possible for a quantifiable entity to describe itself. The relation of mutual-dependence is ontologico-notational because ontologically and notationally without either of what mutually depends the other cannot exist and therefore results in the indescribability of both. The description of this relation is the description of a quantifiable entity.

2.2. Representing a quantifiable entity by (Ω), the meaning of (Ω) is the ontologico-notational relation of mutual-dependence.

2.3. Those two constituent entities are mutually dependent only in two ways,

(i) ; what to demarcate demarcates what to be demarcated and therefore forms an existence with locality,

(ii) ; what is demarcated in (i) demarcates what demarcates in (i) and therefore forms an existence with locality.

(i) and (ii) are two and only two ways of describing a quantifiable entity. This is necessarily so because constituent entities are not themselves self-discernible. Each constituent entity could be the other because their meaning lies only in their relation. That is, the self-demarcation of a quantifiable entity holds without the necessity to identify which constituent entity demarcates the other. The meaning of constituent entities is only to make it possible for a quantifiable entity to describe itself. The existence of a quantifiable entity lies in a ‘state’ in which two self-indiscernible constituent entities discern themselves by mutually demarcating each other. A self-demarcation is descriptively twofold and therefore generates two distinct states of a same quantifiable entity.
(i) and (ii) ontologically means that there is a certain entity which is to be constructed by the relation of mutual-dependence holding between two self-indiscernible entities. Therefore, representing two constituent entities by *a* and *b*, (Ω) can be constructed either by *a*’s demarcating *b* or *b*’s demarcating *a*. In either way (Ω) is ontologically and descriptively existent and is one and the same.

2.3.1. Those two states of a same quantifiable entity is the form of existence of a quantifiable entity. A quantifiable entity has two ways of existence.

2.3.2. Such two states give rise to two descriptions of a same quantifiable entity. They are the descriptive form of a quantifiable entity. A quantifiable entity has two ways of description.

2.3.3. The relation of mutual-dependence is not a bilateral relation but a pair of two sets of unilateral

relations. This pair of two sets stands for a possibility and its counter-possibility (i.e. the otherwise-ness) based upon the self-indiscernibility. This is so because if two constituent entities bilaterally depend upon each other, then it is ontologico-notationally not possible to discern them as two distinct entities. Two constituent entities, in this way, self-describe themselves. The description of a bilateral mutual-dependence would appear as if a quantifiable entity consisted in and of a single constituent entity. Two constituent entities can bilaterally depend upon each other only simultaneously because they are not self-discernible and are to determine each other in such a way as to represent a same quantifiable entity. Such simultaneity only means the self-identity of a quantifiable entity itself. A quantifiable entity, in that way, remains undescribed.

2.3.4. (Ω) is an ontologico-notational representation. If Ω stands for what is refereed to by *a*, then ( ) stands for what is referred to by *b*, if Ω stands for what is refereed to by *b*, then ( ) stands for what is referred to by *a*. (Ω) descriptively means that each of Ω and ( ) is meaningless without the other, and that they are mutually transformative. The validity of this (Ω)-notation lies in the self-imposed necessity that it embodies a parallel ontological interpretation. It sets its own rules by its innate necessity of self-description and therefore demonstrates itself ontologically and descriptively.

2.4. From (Ω) it ontologico-notationally follows that :

 : Ω(Ω(Ω(···(···(Ω)))))

 : (((((Ω)Ω)Ω) ···)···)Ω

2.4.1. Both  and  stand for a same quantifiable entity. They are two and only two ways of describing a same quantifiable entity. The notation may ontologically mean that a quantifiable entity consists in the mutually dependent relation of an entity *a*'s demarcating the other entity *b*. If so, means that a quantifiable entity consists in the mutually dependent relation of an entity *b*'s demarcating the other entity *a*. Or, necessarily, each of and means what the other means. This demarcating relation between *a* and *b* is mutual ; for if there are two and only two self-indiscernible entities such that each depends upon the other, then although each dependence is unilateral, such unilateral dependence is necessarily self-reciprocal. Neither constituent entity, whether it is demarcating or being demarcated, can dispense with the other. Consequently, each, while demarcating the other, also gets demarcated by the other. This relation is mutual, but not simultaneous. The meaning of and is therefore that they describe two possibilities of initiation such that each possibility entails the other as its counter-possibility. The demarcating relation between *a* and *b* is necessarily unilateral and therefore must be initiated by either of *a* and *b*. In either way such initiation necessarily underlies a self-reciprocity. and are the descriptive form of (Ω). (Ω) is necessarily self-identical so as to comply with the initial condition. This means that there are two and only two ways of (Ω)'s being self-identical. and are to say that what respectively appears as Ω and ( ) in , could have been the other way around and therefore results in , or vice versa.

2.4.1.1. and are the natural extension of the meaning of (Ω), based upon the innate necessity of the self-description of (Ω). This is so because what is Ω could have been ( ), and vice versa. The description of (Ω) must be necessarily based upon both and , and not either of them or the unjustified set of and . and are necessarily related to each other and represent (Ω) by their relation. Modes are the form of the forms and . They are the description of (Ω).

2.4.2. and are meaningless if they are not related. This is so because they refer to a same quantifiable entity, and yet both are necessary in the sense that if either is possible, then the other is also necessarily possible. The existence of each necessarily underlies that of the other. Consequently, although they both refer to a same quantifiable entity, neither can be, on its own, the description of (Ω). The existence and description of (Ω) lies in a certain necessary relation between and .

2.4.2.1. Illustration : A geometrical straight line consists in and of two directions, which are such that the existence of each necessarily implies that of the other. Consequently, although both directions stands for a same line, a single direction alone cannot be regarded as the description of a line. A line is therefore described by a certain necessary relation between the two directions. The notion of such two directions is, in this sense, the descriptive form of a line.

2.4.2.1.1. ○– and –○ may be metaphorically conceived as the two directions of a straight line. ○– and –○ are necessarily together to form, so to speak, a descriptive line. They are, so to speak, descriptive directions. Modes are the necessary ways by which ○– and –○ are related to each other. A 'line' commands the two directions so as to represent itself as a line. While a line is descriptively visible, its two directions are not. The two directions are innately related to each other so as to form a line. (Ω) commands ○– and –○ so as to represent itself as a quantifiable entity. ○– and –○ are innately so related to each other as to describe (Ω) by essence (i.e. without any contingent elements). The description of (Ω) by either of ○– and –○ alone is contingent because it can be otherwise. If it is described as the set of ○– and –○, then this set itself will remain unjustified unless it is also described why they make a set. Nor does the description of (Ω) in terms of ○– and –○ with some 'operator' hold good ; for this 'operator' itself would remain mysterious in this way. Only the description of (Ω) in terms of a certain necessary, innate relation between ○– and –○ can be said to hold good without contingencies and mysteries.

2.5. The relation between ○– and –○ lies, like that between the two directions of a line, in the innate necessity of ○– and –○ to relate to each other. Such a relation holds only between ○– and –○. It is not something which can be conceived, if only it is possible, to hold among an entity, another entity and something which exists between and beyond those two entities and contemplates them in order to relate them to each other, while forgetting itself, to which it would therefore appear as if a resultant relation were absolute. ○– and –○ themselves generate certain relations between them based upon their innate necessity to describe (Ω) between them. Such relations are not seemingly but absolutely absolute.

2.6. Rules of the (Ω)-notation :

I : (i) Ω and ( ) stand for two mutually dependent entities.

(ii) ○– and –○ stand for the self-indiscernibility of Ω and ( ).

(iii) (Ω) stands for the necessary relation which holds between Ω and ( ).

II : I-(i), I-(ii), I-(iii) are all simultaneously dependent upon one another.

2.6.1. If there exists Ω and ( ), and if they are self-indiscernible, then Ω and ( ) are inter-transformative. If Ω and ( ) are inter-transformative, then there are two possible states of the two entities' depending upon each other. Neither of such two states precedes the other. Both are necessarily possible. Consequently, neither of them can, on its own, claim to be the description of (Ω). (Ω) can only be described by relations which necessarily hold between ○– and –○, based upon their innate necessity (i.e. within their given meaning).

2.6.1.1. Within this notation the above rules effectively rule out such ill-formed formulae as Ω( ) and ( )Ω. That is, from the meaning of Ω and ( ) such as Ω( ) and ( )Ω can only mean, if they are meaningful at all, the same as (Ω). If (Ω) is a meaningful symbol and therefore exists in a given notation, then in order to be recognizable as a meaningful symbol it must be something which can be understood. The meaning of (Ω) lies in the necessity for the notation in which it exists. Therefore, if (Ω), Ω( ) and ( )Ω are all to be meaningful at all, then the necessity for their notation requires only one of them to be present ; for they can only be identically meaningful. Anything that is already described and understood need not be repeatedly described and understood. A symbol has one and only one meaning. No relations can be described between two identical descriptions, except that of a possibility and

its counter-possibility based upon the self-indiscernibility. A symbol has a definite meaning which is self-discernible. Therefore, two identical descriptions of a same symbol contradict the initial condition. In the same sense there cannot be two FX's. (Ω) is chosen by definition. However, definitions are superfluous when a notation is a demonstrative one. What describes itself necessarily so describes itself, based upon its innate necessity of self-description. It has only itself to describe and to be described. If anything describes itself, then there can be no further innate necessity for it to repeat describing itself again ; for it is already understood. What is self-described cannot describe itself again. This is so because its existence is now only structurally conceivable in a notation which it conditionalizes from itself, and therefore because it has no self to describe. Consequently, from the moment when (Ω) is chosen, nothing else but (Ω) can meaningfully exist in order to designate what (Ω) already designates. The possibility that more than one symbol stand for a same meaning is ruled out by the initial condition from the outset of this demonstration if they are ontologico-notationally demonstrating. Similarly such as ΩΩ cannot exist in the above notation. It can only be interpreted (i.e. made fitted into a given notation) as standing for either two distinct, self-discernible entities or the same as Ω(Ω) or (Ω)Ω. In the first case it contradicts the initial condition. In the second case it is respectively identical with ○– or –○. In this notation each of Ω and ( ) is itself meaningless and therefore cannot exist without the other. Whenever either of Ω and ( ) is present, it is necessarily with the other. If both are present, then they are necessarily either ○– or –○. Both ○– and –○ stand for (Ω) and together describe (Ω).

2.6.1.2. In the (Ω)-notation (Ω) is the most basic symbol which stands for a description. ○– and –○ are the form of (Ω). Ω and ( ) are the most basic demonstrable units. They are together to demonstrate FX.

3. The relations which necessarily hold between ○– and –○ are ontologico-notational. ○– and –○ relate to each other by generating relations as required by their innate necessity to describe (Ω). Such relations are the descriptions of (Ω).

3.1. From ○– and –○ it follows that :

○–○– : ○–(○–(○–(···(···(○–))))) : ○–

–○–○ : (((((–○)–○)–○)···)···)–○ : –○

–○○– : (((((Ω)Ω)Ω) ···)···)Ω(Ω(Ω(···(···(Ω)))))

○––○ : Ω(Ω(Ω(···(···(Ω)Ω)Ω) ···)···)Ω

3.1.1. Neither of ○– and –○ holds without the other because the possibility of each necessarily underlies that of the other. Consequently, ○–○– amounts to ○–, –○–○, to –○. That is, ○–○– and –○–○ are either meaningless or must adopt the forms of ○– and –○ (i.e. their own form) in order not to be meaningless. ○– and –○ are forms. The meaning of a form lies not in symbols themselves but in relations between or among symbols. This means that ○–○– and –○–○ can have a meaning if and only if ○–'s in ○–○– and –○'s in –○–○ are symbols such that manifest their own meaning between themselves. Therefore, they can only be the same as Ω and ( ). ○–○– can only be ○– because ○–○– is, according to its own form, meaningful only as ○–(○–). In ○–(○–) the symbol ○– is necessarily the same as Ω; for in the form ○– ( ) is discerned in terms of Ω. Consequently, if ○–○– is meaningful at all, it can only be ○–(○–), in which ○– - or whatever symbol it may be - identifies itself with Ω by means of ( ). ○–○– is therefore identical with Ω(Ω), which refers to ○–. If ○–○– can only be ○–, –○–○ is necessarily –○. This is so because if –○–○ is meaningful at all, it can only be in its correlation to ○–○–. ○–○– is identical with ○–. ○– is meaningful only in its correlation to –○. Therefore, –○–○ is identical with –○. In this sense –○–○ may be ○–, if and only if ○–○–

is  .

3.1.1.1. There are no ontological states which correspond to  and  . and only amount to a mere claim for their own form, which is respectively  and  .

3.1.2.  and  are necessarily coexistent. The relations which hold between them are the ways of coexistence. There can be two and only two such relations : (Ω) is described ;

(i) where *a* demarcates *b*, and then *b* demarcates *a*, in which the latter *b* is the same as the former *a*, and the latter *a* is the same as the former *b*, nevertheless in which the two demarcations are not one and the same,

(ii) where *b* demarcates *a*, and then *a* demarcates *b*, in which the latter *a* is the same as the former *b*, and the latter *b* is the same as the former *a*, nevertheless in which the two demarcations are not one and the same.

This is so because the coexistence of  and  can be discerned if and only if  and comply with their own rules. That is, both and are simultaneously coexistent, but each is only discernible in terms of the other. This means that and are coexistent if and only if they coexist in such a way that each is discerned in terms of the other. It is necessarily either in terms of or in terms of because the existence of each underlies that of the other.

(i) ontologically means that there exists an entity which consists in and of two self-indiscernible, mutually dependent entities. This entity can be discerned as an existence if and only if its constituent entities depend upon each other in such a way that ;

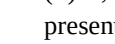
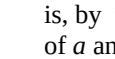
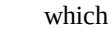
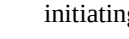
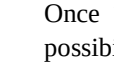
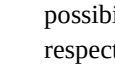
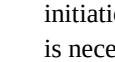
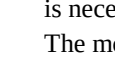
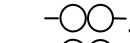
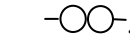
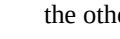
(1) either of them depends upon the other and therefore gets itself discerned in terms of the other,

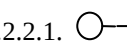
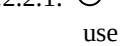
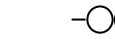
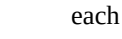
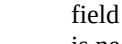
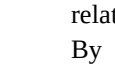
(2) since either of them is now discerned in terms of the other by depending upon it, the other can be also discerned if and only if it depends upon that which has been discerned.

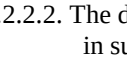
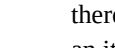
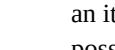
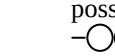
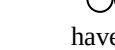
(ii) ontologically means the possibility of the only other initiation. Therefore, the self-indiscernibility of constituent entities and the necessity of their mutual-dependence generates two possible states : (i) *b* in terms of *a*, and then *a* as such in terms of *b* as such, (ii) and vice versa.

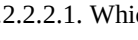
3.1.2.1. Between two such constituent entities the mutual-dependence holds only unilaterally. This is so because the bilateral mutual-dependence of two self-indiscernible entities ontologically and descriptively does not allow the very entities to discern themselves as two distinct entities. The bilateral mutual-dependence between two self-indiscernible entities is ontologico-notationally the same as the mere claim for the existence of a single self-discernible entity (i.e. FX), which is to describe itself and then to manifest itself by demonstration. For this reason the mutual-dependence of two self-indiscernible entities is described as a pair of two sets of two unilateral relations.

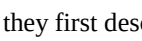
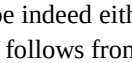
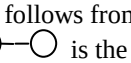
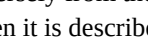
3.1.2.2. (i) and (ii) are both necessarily possible because the possibility of each underlies that of the other. Both (i) and (ii) are the description of a quantifiable entity. The difference between (i) and (ii) is merely a matter of initiation. Either of the two constituent entities has to initiate the mutual-dependence if it is not to be bilateral. Whichever may initiate, that forms (i), while what is left as the other possibility of initiation forms (ii). This is so because these constituent entities are self-indiscernible and only discern themselves in terms of each other by initiation. Consequently, the mutual-dependence becomes a pair of two sets of two unilateral relations. It is this necessity of initiation that differentiates (i) from (ii). (i) differs from (ii) only because it takes the initiation. As two possible states (i) and (ii) are ontologico-notationally one and the same. These two possible states descriptively manifest themselves by either's taking the

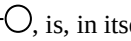
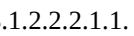
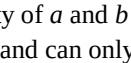
initiation, and indeed either can take the initiation. That which initiates presents itself as (i), (ii) is, based upon (i), that which is left as the only other possibility of initiation. (i), which is presented as  , therefore means that a quantifiable entity ontologico-notationally describes itself as an entity whose two constituent entities mutually 'include' each other. That is, by  a quantifiable entity describes itself as 'inclusive'. This is so because either of *a* and *b*, both of which are not yet discerned, initiates, by initiating, its own self-discernment in terms of the other. Consequently, each discerns itself in terms of the other in such a way that if one discerns itself as *a* by depending upon the other, then the other discerns itself as *b* by depending upon that which discerns itself as *a*, and by doing so *a* establishes itself in contrast to *b*, *b* to *a*. This is the mode  . The mode is a form in which the two descriptive forms  and mutually represent each other by each initiating itself in terms of the other. By the mode  (Ω) is described as inclusive. Once  is established,  necessarily follows as the description of the other possibility and is therefore based upon . That is, what comes to discern themselves respectively as *a* and *b* in  , could have been the other way around if and only if the initiation had taken place the other way around. Therefore, the description of such a possibility is necessarily based upon the one which takes the initiation and presents itself as . The mode  is the descriptive inversion of and is therefore based upon  . If is not based upon , then it can only be identical with what is  . This is so because *a* and *b* are originally self-indiscernible, and therefore because the other possibility of initiation cannot be described until an initiation takes place. As mere possibilities of initiation  and are ontologico-notationally one and the same.

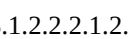
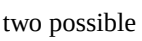
3.1.2.2.1.  is necessarily a possibility which is based upon what is already described. It makes use of the description of (Ω) by  in order to present itself as a description. By  (Ω) is described as anything whose two and only two constituent entities discern themselves by mutually representing each other and by establishing themselves in contrast to each other. That is, by initiation the two forms  and unify themselves as a single field of representation ; for 'initiation' means that whichever of  and is taken, it is necessarily in terms of what initiates that what is initiated discerns itself. The meaning of the notion of initiation is that Ω and ( ) do not have an individual meaning and are only relationally meaningful. The notion of initiation is to describe the meaning of either-ness. By  a quantifiable entity is an existence which recognizes itself as an inclusive unified field.

3.1.2.2.2. The descriptive inversion of  is to say that if (Ω) can be described as an existence in such a way that *b* in terms of *a*, and then *a* as such in terms of *b* as such, then it can also be described as anything that could have been the other way around. This is so because the two constituent entities are initially self-indiscernible and get discerned only by depending upon each other. Therefore, the unilateral initiation of this mutual-dependence is necessarily twofold. That which initiate, by itself, also initiates the other possibility of initiation and therefore forms a set of two unilateral relations.  stands for this. Based upon such an itself,  can also be described that it could have been the other way around. This possibility gives rise to another set of two unilateral relations.  stands for this.  and are, in themselves, one and the same because as a relation they have an identical internal structure. They, however, externally differ from each other because despite of their common internal structure one is necessarily based upon the other. Consequently, the self-description of (Ω) is such that it is internally identical but externally different. This fact constitutes the most fundamental structure of the world and represents itself as the schema of logic. Logic is the self-imposed necessity by which the world describes and manifests itself. Therefore, if the world is to exist, it necessarily exists upon logic.

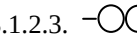
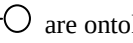
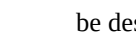
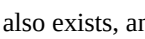
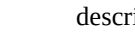
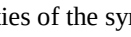
3.1.2.2.2.1. Whichever of what is self-indiscernibly *a* and *b* may take the initiation of discerning itself in terms of the other, it necessarily results in  . is simply the necessary

way by which they first describe themselves.  is whatever that follows from as the only other alternative way of (Ω)'s describing itself and is therefore necessarily based upon . Because of their initial self-indiscernibility *a* and *b* can only be descriptively recognized after they are described. This means that the *a*-initiation and the *b*-initiation cannot be so recognized until *a* and *b* are described. Consequently,  may be indeed either by the *a*-initiation or by the *b*-initiation. In either way the same follows from what is *a* and *b*, and the same  follows from what is  .  is the descriptive inversion of because *a* and *b* relate to each other inversely from those in  . If (Ω) is described by as 'inclusive', then it is described by  as 'exclusive'. This is so because results from the discerned *a* and *b*, while results from the undiscerned *a* and *b*. That is, the discerned *a* and *b* appear as if they are representing each other exclusively from each other, while the undiscerned *a* and *b* appear as if they are doing the same inclusively to each other. Therefore, an entity which discerns itself as 'exclusive' can only be so described based upon the description of an entity which discerns itself as 'inclusive'.

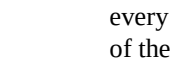
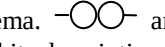
3.1.2.2.2.1.1. What is  , is, in itself, the same as  ; for there is nothing which discriminates between the *a*-initiation and the *b*-initiation. Because of the initial self-indiscernibility of *a* and *b* the *a*-initiation and the *b*-initiation are descriptively simultaneous and can only be seen in terms of the difference between and  . Therefore, if is the descriptive inversion of , then is equally the descriptive inversion of  .

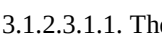
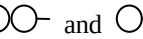
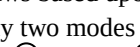
3.1.2.2.2.1.2. There can be no conflict of meaning between  and  . This is so because either of the two possible states of (Ω) can be , and what is left is  for the very reason that it is the one which is left.

3.1.2.2.2.2. Illustration : Each of the two directions of a line can only see itself in terms of the other. They speak about each other in the sense that without either the other cannot exist. Each direction has to describe itself in terms of the other. Such two directions are, in themselves, one and the same. However, such two descriptions are related to each other in such a way that they form a pair of two identical sets such that one is necessarily based upon the other. This is so because each of the two directions of a line has to be discerned in order to be describable. If such a discernment is to take place within the meaning of a line itself, and if this line is to describe itself, then each of the two directions cannot simultaneously discern itself in terms of the other ; for, otherwise, this line remains undescribed and therefore can only be taken for granted. That is, a 'line' does not construe unless it is analytically constructive. Consequently, either of the two descriptions of a line must initiate itself and therefore, by doing so, initiate the other possibility of initiation. This results in a pair of two sets of two identical descriptions such that either of the two sets is necessarily based upon the other.

3.1.2.3.  and  are ontologico-notational. The necessity of description and the necessity of existence coincide with each other in their meaning. Such a description is a self-description and also conditionalizes schematic descriptions from itself. This constitutes a demonstration. An existence is a necessary way in and by which an entity describes itself. There can be no entities which cannot describe themselves, if they are to exist. Whatever may be describable, it also exists, and vice versa.  and  are not only the descriptive properties of the symbol (Ω) but also the ontological properties of a quantifiable entity. That is, they are not only the rules which manipulate (Ω) as a symbol but are also the necessary ways in and by which a quantifiable entity exists. The rules  and  are thus necessarily also the description of the necessary ways in and by which a quantifiable entity exists.

3.1.2.3.1. Every symbol, including those in the schema of logic, has an ontological counterpart. The meaning of a symbol is its rules. Rules are not only to tell how to manipulate symbols but are also to describe what ontologically exists behind those symbols. What ontologically

exists behind every symbol is one and the same and therefore embraces all rules in its wholeness. Rules are meaningless outside this wholeness. The meaning of a rule is necessarily structural. FX is an entity in and by which a symbol and its ontological counterpart are unified. It is therefore the ontological basis of every symbol. Every symbol is conditionalized from FX. The description of FX is rules. Rules therefore govern both symbols and their ontological counterpart. FX is the origin of symbols and ontological entities. The failure to grasp the significance of FX results in the mystification of logic and every other schema.  and  are, in this sense, the most fundamental laws of the world and its description.

3.1.2.3.1.1. The modes  and  are the laws of ontologico-notational discernment. They are the laws based upon which everything is to exist and to describe itself. There can be two and only two modes  and  ; for there can be no other possibilities of  and 's meaningfully relating to each other. and are the only constituents of and and also the only forms of (Ω). Based upon the meaning of and , only and are the natural extension of the meaning of and .

4. The formation rules of the (Ω)-notation :

I : (i) There are two and only two basic symbols, Ω and ( ).

(ii) Either of Ω and ( ) is not presentable without the other.

(iii) Ω and ( ) are not discernible by themselves.

From this it follows that if there exists Ω and/or ( ), then it necessarily gives rise to (Ω). For each Ω there must be a ( ), and vice versa. (Ω) is therefore a symbol which stands for the relation between Ω and ( ). (Ω) represents the most basic unit of the most basic symbols.

II : (Ω) is constructive in two and only two ways :

(i)  : Ω(Ω(Ω(···(···(Ω))))) : for a Ω there is a ( ).

(ii)  : (((((Ω)Ω)Ω) ···)···)Ω : for a ( ) there is a Ω.

Therefore, and ontologico-notationally stands for a same quantifiable entity (i.e. (Ω)). Ω and ( ) are ontologico-notational notions. The self-indiscernibility is the ontologico-notational property of Ω and ( ) and is based upon their innate necessity of self-description. From this it follows that each of and identically refers to (Ω) by underlying each other.

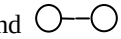
III : If both of and necessarily hold, and if each stands for (Ω), then the descriptive representation of (Ω) lies in the necessary relations between the two possible states, and . Such relations are as follows :

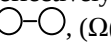
(i) : (((((Ω)Ω)Ω) ···)···)Ω(Ω(Ω(···(···(Ω))))) :

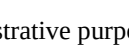
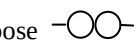
This describes the II-fact that either of Ω and ( ) may initiate its discernment by depending upon the other so as to form (Ω).

(ii) : Ω(Ω(Ω(···(···(Ω)Ω)Ω) ···)···)Ω :

This, based upon the II-fact, describes the III-i-fact that if whichever of Ω and ( ) may initiate its discernment so as to form (Ω), then the III-i-fact is necessarily twofold in such a way that one is based upon the other.

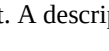
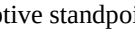
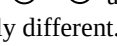
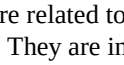
4.1. The modes  and  are the description of (Ω). and are the descriptive form of (Ω).

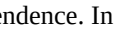
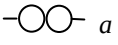
4.2. I, II and III effectively rule out such ill-formed formulae e.g. as Ω( ), ( )Ω, ΩΩ,  ,  , (Ω(Ω))Ω and so on. They are meaningless. Or, if they are meaningful, they can only be interpreted by a given notation. A symbol has one and only one meaning. A formula presents one and only one idea. Two formulae which stand for a same idea without the necessity to do so must dispense with either. This is so because no relations can be described between them, and therefore because they contradict the initial condition. What can be dispensed with is also what can be interpreted and therefore already presupposes its indispensable counterpart based upon which it is interpreted.

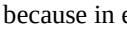
4.3. For an illustrative purpose  may be called ‘inclusion’, and  , ‘exclusion’.

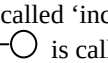
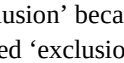
4.4. Illustration : If a geometrical straight line consists of points and consists in two directions, then these two directions can be described at any given points in such a way that they appear necessarily as if either ‘colliding’ with each other or ‘dispersing’ from each other. That is, a straight line can be described in terms of a given collision- or dispersion-point. These two descriptions of a line is, however, identical in their meaning. Therefore, whether the two directions of a line appear at a given point as if colliding with each other or as if dispersing from each other, they represent a same straight line.

4.4.1. The meaning of ‘as if’ lies in its descriptive necessity which is imposed by a descriptive standpoint. A descriptive standpoint is a necessary way of self-description.

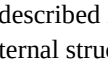
5.  and  are related to each other in such a way that they are internally identical but externally different. They are internally identical because each could have been the other. They are externally different because *a* and *b* get discerned in that which takes the unilateral initiation of mutual-dependence. In  *a* and *b* discern themselves by mutually demarcating each other. In  it is described that such *a* and *b* in could have been the other way around in their identical meaning because in either way the relation between *a* and *b* identically refers to (Ω).

5.1.  is called ‘inclusion’ because *a* and *b* discern themselves by mutually demarcating each other.  is called ‘exclusion’ because *a* and *b* are already discerned. (Ω) is, however, identically described in both and because and have an identical internal structure. Therefore, whatever may be conditionalized from , it identically follows from .

5.2.  and  are internally identical but externally different. This is so because is necessarily based upon . The external difference of what is internally identical, is ‘operational’ in the sense that the external difference of each necessarily manifests itself in the other. That is, the external difference is operationally transformative from each to the other. Therefore the relation between and is also the form of mapping between them.

5.3. Whatever may follow from  , it identically follows from  . Consequently, the form of mapping between and holds in that which identically follows from both and . Given what follows from and , this form of mapping holds in and between that from which and identically conditionalize themselves.

II - ii. 0-Dimensionality

1. The meaning of  is FX and is described as a necessary way in and by which  and  relate to each other. The same applies to . That which is identically to follow from both and , is , however, initially based upon . This is so because

despite of their representing an identical relation between ○– and –○, ○–○ is based upon –○○–. –○○– differs from ○–○ only in the sense that what is –○○– initiates the description of such a representation. Logic is the descriptive 'paraphrase' of the relation between ○– and –○. The 0-dimensionality is such a 'paraphrase' by the mode –○○–.

1.1. Both ○– and –○ stands for (Ω). Therefore, the meaning of ○– and –○ is one and the same. This is to say that (Ω) has an internal structure such that is a relation between ○– and –○. Logic is the description of this internal structure. If ○– and –○ have an identical meaning, then they must have an identical symbolic form. This is so because a description can be understood if and only if there exists one and only one symbol for a meaning and for every different meaning. The use of such symbols is based upon the ontologico-notational meaning of symbols.

1.1.1. Logic is the description of FX. Consequently, it cannot provide any symbol for FX. This is so because FX can only be demonstratively seen in the totality of the description of FX. FX can only be demonstrated. FX is described by (Ω), which has two forms ○– and –○. Both ○– and –○ stands for (Ω) and have an identical meaning. Because of this identical meaning ○– and –○ must be represented by an identical symbol, p, so as to show their identical symbolic form. 'p' is a variable-notion, whose meaning lies in its self-identity and is applicable to whatever that is self-identical. This self-identity is described by the identical meaning which holds in and between ○– and –○.

1.1.1.1. The relation between ○– and –○ is initially described by –○○– and is identically repeated by ○–○. Therefore, p is found initially in –○○– and identically in ○–○. The 0-dimensionality is such descriptive initiality of –○○–.

1.1.1.1.1. A 'conditionalization' is a description by a descriptive necessity. 'p' is said to be conditionalized because it is, by the initial condition, necessary for any two symbols to represent themselves by an identical symbol if and only if they are described to have an identical meaning and are not required to be otherwise by some other descriptive necessity.

II - iii. 1-Dimensionality

1. While the 0-dimensionality is based upon –○○–, any further dimensionalities are common to both –○○– and ○–○ ; for –○○– and ○–○ have an identical internal structure. What differentiates the 0-dimensionality from the 1-dimensionality is the descriptive necessity for either of what is –○○– and what is ○–○ to initiate their own description and results in –○○–.

1.1. In both –○○– and ○–○ the internal structure of ○– and –○ is such that what demarcates, by doing so, gets demarcated. This is the meaning of (Ω) and therefore also of ○– and –○. Consequently, ○– and –○ identically relate to each other in such a way that if what demarcates gets demarcated, then what is demarcated by what demarcates demarcates what demarcates. If ○– and –○ are represented by p, then p self-differentiatively relates to itself in such a way that given a p, it implies itself. This is so because the internal structure of ○– is necessarily identical with that of –○. Therefore, if either of ○– and –○ is possible, then the other is also necessarily possible. ○– and –○ are, however, distinctly discernible from each other in such a way that one determines the other.

1.1.1. p is given by the 0-dimensionality. Once p is given, p implies itself by the 1-dimensionality. This is so because regardless in –○○– or in ○–○ there necessarily exist two such p's that are identical and yet separately discernible. This relation between two p's is therefore operational in the sense that all and only those which are self-identical implies itself. Representing this relation by →, the meaning of → is that it can operationally discern the antecedent from the consequent if and only if the antecedent and the consequent are self-identical in such a way that one determines the other, but both are necessary. This is also the only necessary and sufficient condition for such a discernment to hold good. This self-identity is necessarily unilaterally determinative and therefore makes it possible to discern the antecedent from the consequent even

if they are represented by a same symbol. This unilateral determinativeness is due to the necessity for an initiation, by which two self-indiscernible entities discern themselves by mutually demarcating each other. If p implies itself necessarily unilaterally, then the antecedent and the consequent are discernible from each other and related to each other in such a way that if the antecedent implies the consequent, then it is identical with saying that the antecedent implies that the antecedent implies the consequent. That is, if what is p in the 0-dimension is such that p'→p" in the 1-dimension, then the relation between the 0-dimension and the 1-dimension is that p'→(p'→p"). What is p in the 0-dimension can only be identified with p'. This is so because while that which implies can exist on its own, that which is implied cannot exist without that which implies. Therefore, if p'→p" follows from p, then p is such that is p', which simply implies whatever that is implicative from such an itself. Consequently, p'→p" must be, by its own meaning, identical with p'→(p'→p"). p'→(p'→p") is the operational formation of the meaning of → and is also the meaning of the 1-dimension. It is so formulated by the relation between the 0-dimension and the 1-dimension. p'→(p'→p") is recursive by its own meaning and takes the form of p'→(p'→(p'→(···(···(p'→p"))))).

1.1.1.1. The relation between that which implies and the fact that that which implies implies that which is implied, is the repetition of the meaning of the latter and is recursive. This is so because if p'→p" is to be given, the meaning of p' must be given first. Consequently, whatever may be in the relation of implying and being implied, it necessarily assumes its being already implied by that which implies and therefore remains identical if it is implied by the antecedent. That is, the meaning of p'→p" contains its being implicative by p' and is therefore identical with that of p'→(p'→(p'→(···(···(p'→p"))))).

1.1.1.2. (p'→p")→p' is identical with p' because that which implies can only imply. The meaning of p' is contained in p'→p". Therefore, if the meaning of p' implies p', then it is merely identical with p'. A meaning and its reference can only be identical.

1.1.1.3. While p'→p" contains the meaning of p', which is to imply and is therefore to be the antecedent, the existence of p" is identical with the meaning of p'→p". That which implies implies whatever that is implicative from such an itself and therefore exists on its own. That which is implied , however, cannot exist on its own without that which implies. This also means that if that which is implied exists, then such an existence embodies the meaning of its being implied by that which implies. Therefore, given p", it is the very existence of p" that is identical with p'→p". p" exists necessarily on the assumption that p'→p", but not vice versa ; for p'→p" exists on its own. The relation between an existence and its assumption is 0-dimensional in such a way that an existence is initially the antecedent, and its assumption is the consequent. This is so because if an existence is based upon some assumption, then this existence requires such an assumption for its description, but not vice versa. p" and p'→p" are nevertheless 0-dimensionally related because p'→p" is already existent before it is required by p". If p" and p'→p" are 0-dimensionally related and if p" is initially to be the antecedent, then p"→(p'→p") is necessarily what is self-identical and is therefore identical with p.

1.1.1.3.1. The 1-dimension follows from the 0-dimension, but the very existence of the 1-dimension reduces itself back into the 0-dimension. The difference is, however, while reducing itself back into the 0-dimension, the 1-dimension ‘operationalizes’ the 0-dimension in terms of itself.

II - iv. 2-Dimensionality

1. If p" and p'→p" are 0-dimensionally related and represent themselves in such a way that p"→(p'→p"), then p"→(p'→p") is necessarily identical with (p'→p")→p". This is so because the antecedent and the consequent are one and the same in the 0-dimension. Therefore, once given p"→(p'→p") as being identical with p, then p"→(p'→p") is necessarily identically twofold. That is, the antecedent and the consequent are not discernible from each other in the 0-dimension. This gives rise to (p'→p")→p" as being identical with p"→(p'→p"). p"→(p'→p") is the 1-dimensional description of the 0-dimension. This is so because the very existence of what is implied is based upon

the 1-dimension. If the existence of p" is necessarily based upon the assumption that p'→p", then for such an existence to imply itself is identical with to imply its necessary assumption. Therefore, if and only if the existence of p" is taken for granted, that is, if and only if the 1-dimension exists, then p"→(p'→p") is identical with p"'s implying itself and therefore with p. However, (p'→p")→p" cannot exist without the initial existence of p"→(p'→p"). This is so because (p'→p")→p" can only be 0-dimensionally postulated to be identical with p"→(p'→p") if and only if p"→(p'→p") is first described to be 0-dimensional. p"→(p'→p") and (p'→p")→p" are therefore identical in their meaning, but the latter is necessarily based upon the former. However, such a relation is neither 0-dimensional nor 1-dimensional. While p"→(p'→p") is the 1-dimensional description of the 0-dimension, the descriptive necessity for the 0-dimensional postulate of (p'→p")→p" is the 0-dimensional description of the 1-dimension and therefore constitutes a new dimension. The relation between the 0-dimension and the 1-dimension is 1-dimensional and therefore allows the 0-dimension to be 1-dimensionally described. However, for the 1-dimension to be 0-dimensionally described there must be a new dimension, which is required by the necessity for (p'→p")→p".

1.1. (p'→p")→p" is necessary because of the identical twofoldness of p"→(p'→p"). If (p'→p")→p" and p"→(p'→p") have an identical meaning, then the meaning of (p'→p")→p" is that there 0-dimensionally exists p' and p", from either of which (p'→p")→p" can be given. p"→(p'→p") is identical with p, which is necessarily one, and one only. Consequently, if 1-dimensional p' and p" are to be 0-dimensionally identified, then necessarily either p' is identical with p, or p" is identical with p. This means that (p'→p")→p" is identifiable necessarily either with p' or with p".

1.2.1. The 2-dimensionality is therefore based upon both the 0-dimension and the 1-dimension and is so constructive by either p' or p". (p'→p")→p" is necessarily based upon p"→(p'→p") ; for the latter must be first formulated. That is, the relation between an existence and its assumption is necessarily such that while an assumption can exist on its own and therefore does not necessitate itself to imply anything, an existence, if it is to so exist based upon an assumption, necessarily necessitates itself to imply its assumption.

1.1.1.1. Representing (p'→p")→p" by p'vp", p'vp" is, unlike p'→p", symmetrical. Consequently, p' and p" are interchangeable. This is so because there can be no descriptive initiality in p itself.

1.1.1.1.1. p'vp" can be identically given by p' or p". However, from this it follows that given p'vp", it is not describable if it is given by p' or by p". Consequently, there 2-dimensionally necessarily exists such a case that p'vp" by p' and p'vp" by p". This case is neither 0-dimensional nor 1-dimensional nor 2-dimensional. 0-dimensionally there can only be either p' or p" ; for p is necessarily one, and one only. 1-dimensionally p'vp" by p' and p'vp" by p" cannot be discerned in terms of the antecedent and the consequent ; for p'vp" is constructive by either of p' and p". 2-dimensionally no such two existences of p'vp" is describable by means of v ; for both of them can be given by p' or p" alone, in which case two existences of p'vp" are merely identical. The necessity to describe such a case therefore constitutes a new dimension.

II - v. 3-Dimensionality

1. p'vp" is identifiable with either p' or p" and is nevertheless unspecific about either of p' and p". Consequently, in the existence of p'vp" p' and p" are altogether indiscernible from each other and are both associative with p. This is so because the existence of p'vp", once given by p' or p", cannot tell if it is by p' or by p". If p' and p" are 2-dimensionally indiscernible from each other, but nevertheless so exist, then they are themselves a unity from which p'vp" necessarily follows. The 3-dimension is therefore identical with the 0-dimension in such a way that what is p is what is the unity of p' and p". The unit of p' and p" is existent if and only if it is necessarily by both of p' and p", so that whatever may follow from either of p' and p", it necessarily also follows from this unity.

1.1. Representing such a unit by p'Λp", p'Λp" is the operational formulation of the 0-dimension and is therefore the operational form of p. Consequently, whatever may follow from the 0-dimension, it also necessarily follows from the 3-dimension. The 0-dimension operationally recurs at the 3-dimension.

1.1.1. p'Λp" is, like p'vp", symmetrical and therefore gives rise to the interchangeability between p' and p". This is so because the meaning of p'Λp" lies in its wholeness.

1.1.2. p'vp" and p'Λp" are related necessarily in such a way that if p'vp" is only identifiable with p', then p'Λp', or if p'vp" is only identifiable with p", then p"Λp". That is, p'vp' and p'Λp' are necessarily identical, and the same applies to p"vp" and p"Λp". This is so because p is necessarily identical with itself. Therefore, if p is p', then both p'vp' and p'Λp' are identical with p', and the same applies to the case that p is p". v and Λ have no meaning if there exists only p' as p or p" as p. However, it can be described that p'Λp' are necessarily based upon p'vp'. The same applies to p"Λp" and p"vp". This relation holds between v and Λ when there exists only p' or p", and manifests the relation which holds in what is identical in meaning but necessarily differs in its descriptive presentation. Those two forms of symmetry apply to anything which is identical in meaning but is necessarily twofold in its manifestation. Such a anything is then described to holds upon itself in such a way that the Λ-symmetry is necessarily based upon the v-symmetry, although both are indeed identical in meaning.

1.2. Logical dimensions do not expand beyond the 3-dimension. This is so because there are no descriptive necessities. The 3-dimension is operationally identical with the 0-dimension. This means that logical dimensions operationally only recur between the 0-dimension and the 3-dimension. Logical dimensions are related to one another in such a way that ;

1-dimensionally ; from the 0-dimension the 1-dimension follows,

2-dimensionally ; the 1-dimension describes the 0-dimension,

3-dimensionally ; the 0-dimension which is described by the 1-dimension is identical with the 0-dimension.

There are no descriptive necessities which are self-imposed upon the 3-dimension because p'Λp" is a single unity which describes itself. p is 3-dimensionally identical with p'Λp". p'Λp" is 0-dimensionally identical with p. Logical dimensions therefore complete themselves at the 3-dimension. Such completed logical dimensions form the logical space. This recurring logical space is descriptively relativistic to itself and therefore bears no descriptive relations to itself. That is, what is identical is merely what is identical and therefore cannot be described unless it is within the logical space. Consequently, on one hand, inside the logical space the logical space is descriptively recursive, on the other, outside the logical space the logical space is descriptively relativistic.

1.2.1. The meaning of v and Λ follows from →. The meaning of → follows from the 0-dimensional relation which holds in and between what self-demarcates and is self-demarcated. Therefore, (p, p, p→p) is the general form of logical dimensions. If (p, p, p→p) delinearizes itself by the very meaning of →, then p'→p". p'→p" is, by its own meaning, identical with p'→(p'→p"). (p'→p")→p' is, by the meaning of p'→p", identical with p'. p"→(p'→p") is, by the meaning of p'→p", identical with the linear p. p"→(p'→p") is, by the meaning of the linear p, identical with (p'→p")→p". p is, by the meaning of (p'→p")→p", identical with the unity of p' and p". If p' and p" are a unity, then p' and p" linearize themselves as the unity of p. The unity of p is, by the meaning of a unity, identical with p. p is identical with itself and is therefore p→p. From p→p p→(p→p) and (p→p)→p follow. (p→p)→p is identical with p and is therefore also the unity of p. The unity of p is p. The relation between the linearization and the delinearization is such that the delinearization recurs between the 0-dimension and the meaning of the 3-dimension and is therefore based upon the linear p. (p, p, p→p) is the internal structure of the logical space.

1.2.1.1. (p, p, p→p) is the ontologico-notational structure of FX and is the self-description of FX. FX becomes epistemological through (p, p, p→p). FX with such an internal structure is an entity which can be described to comply with the logical space. Such an entity is an epistemological entity because it is accompanied with its own descriptive understanding (i.e. because it is, by means of (p, p, p→p), the descriptively visualized form of FX). The external structure of FX is the self-description of this epistemological entity.

1.2.1.2. A ‘variable-notion’ is the descriptive necessity for the identity in meaning. An ‘operator’ is the descriptive necessity for the description of this identity. Consequently, it necessarily appears as if an operator is delinearizing a linear variable-notion. It is the linearity of a variable-notion that manifests itself in and as the meaning of an operator. For this reason if a variable-notion remains linear, on one hand, v and ∧ remain identical with the meaning of a variable-notion itself, on the other, the delinearized p"→(p'→p") is identical with the linear p→p. This latter so holds because p" as the antecedent and p'→p" as the consequent stand for the identity of p" and p'→p" in their meaning. From p→p pvp follows as the 1-dimensional description of the 0-dimension. From pvp p∧p follows as the unity of the 0-dimension. The value of a variable-notion lies in this variable-notion itself, and in nothing else. If it appears as if a variable-notion takes values, this is because those which are such values already underlie the meaning of this variable-notion. That is, a ‘variable-notion’ is the internal structure of an entity and is therefore the meaning of an entity. An operator is always the form of a dimensionality, and its meaning is always formulated by a dimensional relation. Dimensionalities are to describe the meaning of a variable-notion, and an operator represents the descriptive necessity of each dimensionality. The descriptive necessity for → is that p is necessarily self-identical and unilaterally twofold. While p can only be initially given in the 0-dimension (i.e. only by ), the description of this twofoldness is necessarily common to both  and  . If this constitutes a new dimension, then this new dimension must be describable solely on the basis of an existing one. For this reason the meaning of → can only be found between the 0-dimension and the 1-dimension. No contingencies arise in the process of the conditionalization from FX. This is so because whatever may be descriptively necessary, it is necessarily reducible into the self-describability of FX, and because only what is descriptively necessary can be described. The meaning of every operator is already contained in the linear variable-notion p. The delinearized form of p (i.e. p' and p") is to make this implicitly contained meaning explicit and is therefore to describe the meaning of p.

1.2.1.3. The logical space is consistent because every logical description is a necessary description of what is self-identical and is based upon the self-imposed self-describability of what is self-identical. Consequently, there are no contingent descriptions in the logical space. The logical space is complete because the description of what is self-identical recurs to what is self-identical and makes itself relativistic to itself.

1.2.1.3.1. The consistency and completeness of a system which is consistent and complete by itself cannot be ‘proved’, but can only be demonstrated. This, in relation to the so-called ‘proofs’ of such consistency and completeness, is identical with saying that unless the descriptive necessity for truth-values is described, these so-called ‘proofs’ have no ground for such claims. However, if this descriptive necessity is to be described, then it must be necessarily within the logical apace. Consequently, ‘proofs’ become a demonstration. A ‘proof’ is, if it is valid, the demonstration of a descriptive necessity. ‘Proofs’ which are based upon the invalidity of a contradiction (and the law of excluded middle) cannot be valid if they fail to describe the very validity of the invalidity of a contradiction. However, it is the very description of the invalidity of a contradiction that constitutes the logical space with the notion of truth-values.

1.2.1.4. Between and within dimensions the following operational relations hold :

A : The 0-dimension gives rise to p, which is whatever that is self-identical. Only and all those which are self-identical have a descriptive necessity in the logical space.

CP : What is self-identical relates to itself necessarily in such a way that it ‘implies’ itself. It ‘implies’ itself because what is self-identical can be described if and only if it is also unilaterally twofold. Therefore, the meaning of this ‘implication’ is based upon the describability of what is self-identical. What is self-identical can only be described in such a way that what demarcates itself, by so doing, gets itself demarcated. Therefore, given p by A, then necessarily p→p. p→p can be described as p'→p" ; for the meaning of the consequent p is identical with the meaning of the antecedent p’s implying itself, while the meaning of the

antecedent p is to imply itself. p→p is therefore, by its own meaning, delinearizable as p'→p". CP is necessarily common to both  and because and have an identical internal structure. Once given p initially in , p is also found in  .

MPP : From p by A p→p follows by CP. p→p is p'→p" by the meaning of →, where p' and p" are the delinearized p. p→p and p'→p" hold because without the antecedent p (or p') the consequent p (or p") does not hold. Therefore, given the antecedent p by A, then the consequent p necessarily follows by CP. This is identical with saying that given p' and p'→p", then necessarily p" ; for p' and p" are identical necessarily in such a way that what gets demarcated is not so describable without what demarcates, but not vice versa. MPP is merely the meaning of CP and is therefore formulatable as p'→(p'→(p'→(···(···(p'→p"))))), which is, by its own meaning, identical with p'→p".

vI : If p'→p" is, by its own meaning, identical with p'→(p'→p"), then p is, by its own meaning, identical with p"→(p'→p"). This is so because the meaning of the existence of p" is identical with the meaning of the existence of p'→p". Consequently, p"→(p'→p") is merely the delinearized form of the linearity and is therefore identical with the meaning of p→p, which is in turn identical with the meaning of p. Once given p"→(p'→p") as being identical with the meaning of p, (p'→p")→p" is also identical with the meaning of p. This is so because the antecedent and the consequent bear no descriptive meanings in terms of the meaning of p. p"→(p'→p") precedes (p'→p")→p" despite of the identical meaning between p" and p'→p" ; for p'→p" exists on its own and is therefore, by itself, self-sufficient. This means that p'→p" does not motivate itself to be implicative and therefore requires a descriptive necessity to be so, while the existence of p" as the antecedent is self-imposed with such a necessity. From this it necessarily follows that based upon p"→(p'→p") and therefore also upon the meaning of p, (p'→p")→p" holds as being identical with either p' as p or p" as p. This is so because p is necessarily one, and only one, and is therefore only identifiable with either p' or p". Therefore, if and only if p' or p", then (p'→p")→p" holds as being identical with p"→(p'→p"). This means that if and only if p' by A, or p" by A, then necessarily (p'→p")→p".

vE : If (p'→p")→p" by either p' or p", then the existence of (p'→p")→p" necessarily comprises the possibility of both p' and p". This is so because from the existence of what holds by either of p' and p" it cannot be described if it is by p' or by p".

∧I : If it is descriptively necessary for the existence of (p'→p")→p" that both p' and p" hold, then p' and p" hold only as a unity which refers to the meaning of p. Therefore, this unity holds if and only if both p' and p" hold.

∧E : If this unity is the unity of p' and p", then whatever may hold from either of p' and p", it also holds from this unity. This is so because this unity does not hold without the necessity that both p' and p" hold.

1.2.1.4.1. A, CP, MPP, vI, vE, ∧I and ∧E are related in such a way that one necessarily succeeds another by describing the meaning of its predecessor, and that they recur and therefore form a closed chain. They are therefore consistent in the sense that nothing else holds within this closed, recursive chain of meaning. They are complete in the sense that they are all enclosed within, and converge upon, the meaning of A.

II - vi. Form of Mapping

1. Once initially given p by , p can be identically given by ; for and have an identical internal structure. p is therefore common to both and . Whatever may subsequently follow from this p, it is therefore also common to both and . What subsequently follows from p recurs and becomes relativistic to itself. However, the descriptive necessity that p is given initially by and only thereafter can be

found in ○--○, makes it necessary to make a discernment between those two identical logical spaces. The logical space is necessarily identically common to both –○○– and ○--○. Two logical spaces are identical in their own space and therefore, on their own, do not differ from each other. However, the necessity to make a discernment between those two identical logical spaces, makes it possible for the logical space to describe itself and therefore to descriptively show its consistency and completeness.

1.1. The logical space describes itself in terms of the relation between –○○– and ○--○. This is identical with saying that two identical logical spaces see each other by means of the relation between –○○– and ○--○. Two identical logical spaces relate to each other necessarily in such a way that ;

(i) –○○– is, in itself, identical with ○--○, and vice versa,

(ii) what is ○--○ could have been –○○–, and vice versa,

(iii) if what is –○○– is –○○–, then what is ○--○ cannot be –○○–, and vice versa.

(i) holds because –○○– and ○--○ have an identical internal structure. (ii) holds because this identical structure is such that what demarcates itself, by so doing, gets itself demarcated. (iii) holds because what gets itself demarcated in –○○– is identical with what demarcates itself in ○--○, and therefore because neither of –○○– and ○--○ can be the case in the other without falling into the impossibility of demonstration. However, if –○○– is the case, then ○--○ is also necessarily the case. This means that –○○– and ○--○ coexist necessarily in such a way that both are not in the same logical space, and therefore that each exists in the other. Two identical logical spaces therefore form a single logical space by describing each other in such a way that each becomes the other by transforming what demarcates itself in each into what gets itself demarcated in the other. This form of mapping is ‘negation’.

1.1.1. By negation, therefore, there exist two identical logical spaces such that each contains the other. ○--○ is –○○– if and only if it is negated, and vice versa. Each contains the other in such a way that they are identical. Consequently, the description of either alone suffices for the description of both. The descriptive necessity for this is that –○○– with the negation of ○--○, is not discernible from ○--○ with the negation of –○○–. The logical space with this form of mapping is the self-described logical space and contains the notion of truth-values. A ‘truth-value’ is therefore identical with the logical space itself. The validity of a ‘truth-value’ lies in the very existence of the logical space. Truth-values are identical with each other if and only if they are on their own and are therefore not related to each other. The meaning of each truth-value lies in the other and therefore in their mutual-relation by means of negation. Representing truth-values by T and F, the truth-value of p is necessarily T or F, and not both. This is so because if the truth-value of p in –○○– is T, then that of p in ○--○ is necessarily F, and vice versa. Therefore, if two such p’s are identified with each other, then p has two truth-values which are either T and the negation of F or F and the negation of T. This means that p in the self-described logical space has T and F which are assigned to p in such a way that if p takes T, then the negation of p takes F, and vice versa.

1.1.1.1. p is necessarily one, and one only. Therefore, the coexistence of T and F, both of which are assignable to p, forms the ‘matrix’ of p. The descriptive necessity for a ‘matrix’ is this oneness of p. Therefore, the meaning of a ‘matrix’ is to enumerate T and F in such a way that they are not simultaneously assignable to p and are therefore not a unity.

1.1.1.2. Representing negation by ~, the matrix of p descriptively determine that of ~p. If p is T, ~p is F, and if p is F, ~p is T. From this it follows that the relation between p and ~p is identical with that between T and F. Consequently, the 0-dimension of the self-described logical space consists in and of either p or ~p. If it consists in and of both p and ~p, then it results in the impossibility of demonstration ; for this is identical with saying that p is T as well as F at the same time, and therefore, contrary to the existence of the logical space, results in the

indescribability of p. p is what is identical with itself. Therefore, if T and F are identical with the logical space necessarily in such a way that each identically holds in the other, then p is identical with either T or F. If p is said to be identical with both T and F, this is the same as saying that what is self-identical holds outside itself and therefore without any descriptive necessities to bind what is self-identical by an identical symbol. If what is self-identical holds outside itself, then there are no relations which hold in what is self-identical. Two existences of what is self-identical are merely the same as two p's without any relations between them. p is not describable if it is on its own and remains so. A symbol does not signify anything if it is not describable to be related to itself. This goes against the initial condition and is contrary to the described existence of p (i.e. of the logical space). If not both p and ~p can constitute the 0-dimension, then p∧~p is contrary to the meaning of ∧ ; for p and ~p cannot be a unity. The operational relations which hold between p and ~p are therefore as follows :

RAA : From p∧~p nothing follows. If anything which follows from p∧~p holds, then it is identical with saying that the self-describability of FX does not hold.

DN : The negation of ~p is identical with p, and vice versa. This is so because T is identical with the negated F, and F is identical with the negated T.

The identity between T and ~F is identical with that between F and ~T ; for T and F are either identical with each other if they are unrelated, or already underlie each other if they are related. p is matricized for this reason. p and ~p can be related to each other if and only if they comply with RAA and DN. From this it also holds that :

MTT : The meaning of p'→p" is identical with that of ~p"→~p'. This is so because the relation between p' and p" is such that they and only they are discernible from each other in such a way that the latter is based upon the existence of the former.

This also means p' and p" are necessarily not identical if they are delinear. Consequently, each is delinearly identical with the negation of the other because the delinear relation between p' and p" is identical with that between p and ~p. This means that given and based upon p'→p", p' is ~p", and p" is ~p'. That is, ~p"→~p' is based upon, and identical with, p'→p".

1.1.1.2.1. T and F are, in themselves, identical with the logical space itself. Therefore, the meaning of T is identical with that of F if they are unrelated. In the matrix of p T and F are not related but only enumerated so as to stand for the identical and twofold relation between  with the negation of  and  with the negation of . If the truth-value of p is T or F and refers to the identical meaning of the unrelated T and F, then whatever that is operationally identical with p is evaluated by either T or F in such a way as to refer to the identical meaning of the unrelated T and F. Consequently, it does not make any difference if this meaning of the unrelated T and F is represented by T or F.

1.1.1.3. The matrix of p is {T, F}, with which the matrix of ~p is correlated as {F, T}. From this it follows that the matrix of p' is {T, T, F, F}, with which the matrix of p" is correlated as {T, F, T, F}. This is so because p' and p" are correlated not only with each other but also with p. The correlation between p and p' and between p and p" is linear and therefore generates a linear correlation between p' and p". The correlation between p' and p" is delinear without this reference to p. This means that if p' is T, p" is F, if p' is F, p" is T. Consequently, the matrices of p' and p" consist of two distinct parts. This can be shown as follows :
p' {T, {T, F}, F}, p" {T, {F, T}, F}, in which the outer-matrices stand for a linear part, and the inner-matrices stand for a delinear part.

1.1.1.3.1. The meaning of the delinearity of p' and p" lies in their correlation without a reference to p. p' and p" are delinearly correlated in such a way that each is not the other ; for p'→p" is, otherwise, identical with p→p. For the same reason the relation between the matrices of p and ~p is identical with that between those of the delinearized form (i.e. p' and p") of p. The existence of p' and p" is due to the descriptive necessity for p to discern the antecedent and

the consequent out of itself when it implies itself in accordance with the relation between what self-demarcates and what gets self-demarcated. Therefore, it is this descriptive necessity that requires p' and p" to be delinear and therefore not to be identical with a same truth-value when they identify themselves in terms of truth-values. If p' and p" are identical with a same truth-value, they are linear and are therefore not discernible from p. The descriptive necessity for the delinearization of p and that for truth-values (and therefore for matrices) go along with each other because what is conditionalized out of the logical space necessarily underlies the logical space. That is, T and F are themselves nothing but the values of a 'variable-notion'. The relation between p→p and p'→p" is that the former is describable to be identical with p only in its reference to the latter. The truth-value of p is the identical meaning of the unrelated T and F.

1.1.1.4. If all and only those which are identical with themselves can be given in the logical space and are subsequently operationalized, then the meaning of RAA, DN and MTT is already in A. This is so because two identical logical spaces cannot be in a single logical space unless each exists in the other. The self-described logical space is a single logical space such that each of the two identical logical spaces is identically contained in the other. This already means that not both p and ~p can be given by A in the 0-dimension of this self-described logical space. This is so because what can be given by A in each logical space can only be either identical with or identically contained in what can be given by A in the other. For this reason the matrices of p and ~p correlatedly consist of T and F. That is, the meaning of p already contains that of ~p by means of its matrix and is therefore also contained in that of ~p. Matrices are descriptively necessary because of the descriptive necessity for the existence of both  and  . The meaning of p and that of ~p are mutually contained in each other necessarily in such a way that each is contained in the other, based upon the other. Consequently, if p is given by A, then ~p is based upon p, or if ~p is given by A, then p is based upon ~p. In either way it identically results in the same meaning of p and therefore of ~p. Both p and ~p can be given by A if and only if it is in the logical space instead of in the self-described logical space ; for p and ~p are then in themselves and are therefore one and the same. Consequently, the relation between the recursively closed chain of A, CP, MPP, vI, vE, ∧I and ∧E and those newly found RAA, DN and MTT is such that the latter is descriptively superfluous and is already implicitly incorporated in the former. The latter makes what is implicit in the former explicit by describing what is impossible in the former without falling into the impossibility of demonstration. Therefore, if and only if p and ~p comply with RAA, DN and MTT, then they also necessarily comply with A, CP, MPP, vI, vE, ∧I and ∧E, and vise versa. p∧~p cannot even be formulated and is in fact non-existent. The existence of such a non-existence is only seen if and when the logical space sees itself by describing itself by means of truth-values, which are, if they are not related, identical with the logical space itself. The descriptive necessity for truth-values lies in the descriptive necessity for the logical space to see itself. Consequently, the meaning of truth-values and that of negation are identical and results in RAA, DN and MTT. The impossibility of p∧~p is the impossibility of the logical space's not seeing itself ; for p and ~p are, otherwise, identical. The impossibility of p∧~p governs the self-described logical space because the logical space is necessarily to see itself by the self-imposed descriptive necessity for the coexistence of and , which gives rise to truth-values and negation.

1.1.1.4.1. The consistency and completeness of the logical space can be seen if and only if the logical space sees itself. This means that such consistency and completeness can be seen necessarily through the impossibility of p∧~p and therefore through truth-values and negation.

1.1.1.5. The matrices of p' and p" are respectively {T, {T, F}, F} and {T, {F, T}, F}. From this it follows that the matrix of p'→p" is {T, {F, T}, T} : Representing the identical meaning of the unrelated T and F by T, the linear part of p'→p" stand for T ; for the meaning of → does not hold if p' and p" are linear. This results in {T, { , }, T}. If p' and p" are delinear, then p" as the antecedent and p'→p" as the consequent are identical. This means that the meaning of → does not hold between them, and therefore that → between them stands for T. This is possible if and only if the antecedent and consequent are linear and have a same truth-value. Therefore, this results in {T, {F, T}, T}. The matrix of p'→p" is therefore found by p→p and

p"→(p'→p"). The latter is the paraphrase of the meaning of the former by means of its delinearity and is therefore descriptively based upon the former. The meaning of → and the matrix of → are therefore compatible.

1.1.1.5.1. If the identical meaning of the unrelated T and F is represented by F, then the matrices of p' and p" are respectively {F, {F, T}, T} and {F, {T, F}, T}. Consequently, the matrix of p'→p" is {F, {T, F}, F}. This is so because if the identical meaning of unrelated T and F can be represented by F as well as T, then T and F have the same discernibility as the related T and F and are therefore correlated. Therefore, matrices change in accordance with this correlation. However, by the very correlation between T and F the identical meaning of the unrelated T and F cannot be represented both by T and by F at the same time. T and F are identical in themselves. Therefore, there is no difference if p'→p" is metricized as {T, {F, T}, T} or {F, {T, F}, F}.

1.1.1.5.2. The outer-matrix and inner-matrix of p'→p" do not have an identical meaning and are related in such a way that the latter is based upon the former. This is so because p"→(p'→p") is identified with p→p by p→p. p→p is identical with p because if the antecedent and the consequent are not discernible from each other, then the meaning of → does not hold. The matrix of p stands for the identical meaning of the unrelated T and F and is therefore evaluated by T ; for not both p and ~p can be given together by A in the same 0-demension. Therefore, if p is given, then this p is necessarily on its own. This means that T and F cannot be correlated if they are to be assignable to this p. The linear part of p"→(p'→p") is therefore identical with p"→(p→p). p"→(p→p) is identical with p→p because p" is neither what to imply nor what to follow from p without being correlated to p'. For this reason the matrix of p"→(p'→p") both linearly and delinearly stands for the identical meaning of unrelated T and F and is therefore evaluated by T.

1.1.1.5.2.1. If the outer-matrix and inner-matrix of p'→p" are related that way, then the inner-matrix is to be linearized by the outer-matrix. This is the meaning of p"→(p'→p"), in which the linear part of the matrix of p'→p" linearizes the delinear part of the matrix of p'→p". This is so because the meaning of p"→(p'→p") is based upon that of p→p in the sense that the latter identifies the former by its own meaning.

1.1.1.5.2.2. Once given the matrix of p'→p", it follows that the matrix of p'vp" is {T, {T, T}, F}. This is so because p'vp" is identical with (p'→p")→p", which is, by the matrix of p'→p", matricized as {T, {T, T}, F}.

1.1.1.5.2.2.1. Once given the matrix of p'→p", p' and p" are interchangeable. This is so because p' and p" are then correlated with T and F by means of → and its matrical evaluation.

1.1.1.5.2.2.2. The relation between the matrix of p'→p" and that of p'vp" is that the latter is, based upon p"→(p'→p"), the linear form of the delinearity which is manifested in p'→p". This is so because the matrix of p'→p" is necessarily based upon p"→(p'→p"), which is 0-demensionally identical with (p'→p")→p". That is, the inner-matrix of p'→p" is determined by the outer-matrix of p'→p" in the sense that p→p is the operational model of p"→(p'→p"). This means that the meaning of p"→(p'→p") is, based upon p→p, to linearize the delinear part of the matrix of p'→p" and is therefore not concerned with the linear part. Therefore, by the 0-dimensional identity between p"→(p'→p") and (p'→p")→p" this same meaning holds in (p'→p")→p" and thus results in { , {T, T}, }, in which T stands for the identical meaning of the unrelated T and F. However, (p'→p")→p" differs from p"→(p'→p") in the sense that p→p" differs from p"→p. The meaning of p"→(p'→p") and (p'→p")→p" is in their delinearity. In the linear part of p"→(p'→p") and (p'→p")→p" the consequent of the former and the antecedent of the latter are identical with p→p and therefore stand for the identical meaning of the unrelated T and F. This means that p"→(p'→p") is linearly identical with p"→p, and (p'→p")→p", with p→p". By the meaning of → p"→p is identical with p, and p→p", with p". Such p and

p" are both 0-dimensional. p stands for the identical meaning of the unrelated T and F. Therefore, p"→(p'→p") results in {T, {T, T}, T}. p", in its distinct sense from p, stands for the delinearity and is therefore correlated with p'. If such p" is 0-dimensional, then T and F are necessarily correlated and therefore cannot stand for the identical meaning of the unrelated T and F. T is linearly identical with T, and F, with F. Consequently, (p'→p")→p" results in {T, {T, T}, F}. The meaning of v and the matrix of v are compatible because (p'→p")→p", by the very meaning of →, stands for the descriptive impossibility for p' and p" to be unrelated and therefore also for T and F to be unrelated if they are linear and yet discernible from each other.

1.1.1.5.2.2.2.1. The relation between the matrix of p'→p" and that of p'vp" stand for the relation between the linearity and the delinearity in such a way that, on one hand, what is delinear is to be linearized by what is linear if the 0-demension is linear, on the other, what is linear is to be delinearized by what is delinear if the 0-dimension is delinear. However, the 0-dimension can only be described to be delinear based upon the linear 0-dimension. This is so because the relation which holds in and between what is delinear, cannot exist without what is linear. That is, p→p is necessarily descriptively more fundamental than p'→p" in the sense that without what is self-identical nothing is describable to imply itself.

1.1.1.5.2.3. The matrix of p'∧p" is {T, {F, F}, F}. This is so because p'∧p" is the 0-dimensional unity of the delinear form (i.e. p' and p") of p. This means that p'∧p" is discernible as either p' or p" in such a way that ;

(i) if p'∧p" is the antecedent, and if either p' or p" is the consequent, then the antecedent is, by the meaning of →, discerned as being identical with the consequent,

(ii) if p' or p" is respectively the antecedent, and if p'∧p" is the consequent, then the antecedent is, by the meaning of →, discerned as being respectively identical with p" or p'.

This is so because p'∧p" is 0-dimensional in such a way that the delinearity is 0-dimensionally taken for granted. Consequently, (i) whatever that is implied, is only implicative from itself, (ii) whatever that implies, implies what it is described to imply by the delinearity. The difference between (i) and (ii) is due to the difference of meaning between the antecedent and the consequent. While the consequent necessarily assumes the existence of the antecedent and is therefore not existent without the antecedent, the antecedent does not assume the existence of the consequent and is therefore on its own meaning. Therefore, p' or p" as the consequent is related to p'∧p" as the antecedent in such a way that if p'∧p" is 0-dimensional, then p' or p" assumes what is necessary for it to exist 0-dimensionally, which is namely itself. p' or p" as the antecedent is related to p'∧p" as the consequent in such a way that if p'∧p" is 0-dimensional, then p' or p" as the antecedent implies whatever that is to be implied from such an itself. From this it follows that (i) (p'∧p")→p' and (p'∧p")→p" are respectively identical with p'→p' and p"→p", which are, in turn, identical with p→p, (ii) p'→(p'∧p") and p"→(p'∧p") are respectively identical with p'→p" and p"→p'. The matrix of p'∧p" is therefore what metrically satisfies all these.

1.1.1.5.2.3.1. The relation between the matrix of p'vp" and that of p'∧p" is that ;

(i) while their linear part is identically delinear,

(ii) their delinear part is linear in such a way as to be delinear to each other.

This is so because (i) pvp and p∧p are necessarily identical, (ii) by the same descriptive necessity which requires pvp and p∧p to be identical p'vp" and p'∧p" are necessarily distinct from each other. Otherwise, there can be no descriptive necessity for the delinearity of p and therefore for the difference between v and ∧. Therefore, the matrix of p'∧p" is {T, {F, F}, F} and is necessarily based upon the matrix of p'vp". The meaning of ∧ and the matrix of ∧ are compatible because the unity of the delinear form (i.e. p'

and p") of p is itself linear in such a way that it is distinct from, and based upon, p'vp". Consequently, between p'Λp" as the antecedent and p'vp" as the consequent the meaning of → does not hold in such a way that while the delinear part of p'Λp" differs from that of p'vp", their linear part remains identical with each other. By the descriptive necessity for p"→(p'→p") the delinear part of p'vp" is necessarily { , {T, T}, }. This means that if the delinear part of p'Λp" is distinct from that of p'vp", and if this is so necessarily based upon that of p'vp", then it can only be distinct as { , {F, F}, }.

1.1.1.5.2.3.1.1. The difference between v and Λ lies in the difference between p and its delinear form. p gives rise to its delinear form because what is self-identical is necessarily self-implicative, due to the descriptive necessity for what is referred to by p to be self-demarcative in order to be ontologico-notationally discernible as an entity. This means that the difference between v and Λ is necessary. The matrix of Λ stands for this necessity. Consequently, if the delinear part of the matrix of p'vp" is based upon its 0-dimensional identity with p"→(p'→p") and is therefore necessarily { , {T, T}, }, then by the same necessity the delinear part of the matrix of p'Λp" can only be { , {F, F}, }. The descriptive necessity for Λ lies in the descriptive necessity for p to become delinear. The matrix of p'Λp" represents this descriptive necessity.

1.1.1.6. The identical meaning of the unrelated T and F can be identically represented by T or by F ; for p is identically identifiable either with T or with F. This means that the matrix of p is identically evaluative either by T or by F. It is in this evaluation that T and F are described to be unrelated. The meaning of the matricized p is necessarily in p and is identical with the meaning of p. Consequently, whatever may be identifiable with p, it can only be related to itself. It is not T in its relation to F or F in its relation to T that is identically identifiable with p and evaluates the matrix of p. In being identified with p T and F are in themselves and are therefore identical in meaning. This identical meaning of the unrelated T and F is therefore p itself. This means that the truth-values of p is its own logical space (i.e. its own self-describability). That is, the demonstrability of p is the truth-value of p. p is therefore itself a tautology. Whatever that is identifiable with p is also itself a tautology. What is operationally identical with p is given by the delinearity of the linear p ; for if p remains linear, then no operations of p hold. The truth-values of a tautology is its identity with p itself and is therefore the very demonstrability of p. If p demonstrates itself, then p evaluates itself only by its demonstrability and therefore by the relation which holds between p and what p demonstrates (i.e. between p and itself). In the very fact that p is evaluated as T, and that whatever that is operationally identical with p is also evaluated as T, the necessity for every other evaluation lies. Every matrix has a descriptive necessity in the sense that it is necessarily demonstrated by p. The description of such a descriptive necessity is a tautology in the sense that every matrix is determined by p, its matrix and its evaluation and therefore has a necessary relation with those. This means that whatever that complies with A, CP, MPP, vI, vE, ΛI and ΛE , RAA, DN and MTT, is a tautology. That is, p determines every matrix. Therefore, if it is described how p determines every matrix, then such descriptions are themselves tautologies. This is so because such descriptions can only be the description of the ontologico-notational properties of p and are therefore the paraphrase of the meaning of p.

1.1.1.6.1. In the matrix of p T and F are not correlated but only enumerated. Therefore, the matrix of p may be {T, F} or {F, T}. However, T and F come to be correlated due to the existence of ~p. p and ~p are identical if each is in itself. Otherwise, p and ~p are correlated in such a way that each exists in the other, and therefore that neither is the other. Consequently, p and ~p come to be necessarily matrical in such a way that if either is matricized as {T, F}, the other is matricized as {F, T}. The meaning of negation is therefore necessarily matrical and designates this matrical difference. If the identical meaning of the unrelated T and F is representable by T or by F, then such T and F are correlated. This means that the matrix of p which is evaluated as T, cannot be identical with the matrix of p which is evaluated as F, although evaluations bear an identical meaning. For this reason negation exists in the self-described logical space. The meaning of negation is to correlate T and F so that the matrix of p (and therefore the matrices of p' and p") come to discern itself against the other way of matricization, which gives rise to an identical meaning and therefore need not be repeated. This also stands for the meaning of the impossibility of pΛ~p. If the meaning of

negation is matrical and stands for the correlation between T and F, then negation is applicable to whatever that is matrical, and makes T and F interchangeable. The two possible ways of matricization are compatible because they are independent from each other in such a way that no operations hold between them. They have an identical structure with an identical meaning. The consistency and completeness of each is seen in the other in the sense that the necessity of each underlies the possibility of the other.

1.1.1.6.2. It does not make any difference in meaning if the identical meaning of the unrelated T and F is represented by T or by F. p is evaluative as T or as F. This relation between T and F describes what holds and what does not hold in the self-described logical space. That is, if p is evaluated as either of T and F, then operational relations between such T and F gives rise to 'rules'. Either of T and F is the evaluator of p. Based upon the evaluator of p, 'rules' describe how to linearize. This is so because the delinearity cannot be described without the linearity, and therefore because operators are matricized necessarily based upon the linearity. This also means that not both T and F can be the evaluator and therefore can designate the logical space. 'Rules' are therefore given by the descriptive necessity for p to be evaluated as either of T and F and the descriptive necessity for the linearity between T and F. 'Rules' therefore can only be made descriptively visible matrically.

1.1.1.6.2.1. p is necessarily discernible from itself. This self-discerniblity of p generates operators. This also means that if p is not discernible from itself, then the meaning of operators does not hold and therefore becomes identical with the meaning of p and consequently with the evaluator of p (i.e. with the meaning of the demonstrability of p). Operators do hold because the self-discerniblity of p is descriptively necessary. The self-discerniblity of p is, however, necessarily based upon the self-identity of p. Consequently, operators do hold only in such a way that their meaning is describable necessarily based upon this relation between the self-discerniblity of p and the self-identity of p. The delinearity is therefore paraphrased necessarily by the linearity. That is, the delinearity which is based upon the self-discerniblity of p, is paraphrased necessarily by the linearity which is based upon the self-identity of p. This also stands for the meaning of matrices. Operators and matrices are compatible because the latter is just the description of the meaning of the former. Matrices describe the relation between p→p and p'→p". The meaning of p'→p" is based upon that of p→p, and therefore its matrix is based upon the identity between p"→(p'→p") and p→p.

1.1.1.6.2.1.1. The self-identity of p is manifested by p→p, while the self-discerniblity of p is manifested by p'→p". By the meaning of → p"→(p'→p") is operationally identical with p→p. Therefore, the meaning of → is, by means of a matrix, described as the form of linearization of the delinearity. p"→(p'→p") is 0-dimensionally identical with (p'→p")→p". Consequently, the 0-dimension is operationally the unity of p' and p". Rules are the description of the matrical description of the meaning of operators. The relation between the linearity and the delinearity (and therefore between the self-identity of p and the self-discerniblity of p) stands for the meaning of operators.

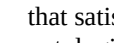
1.1.1.6.2.1.2. The consistency and completeness of the logical space without negation (i.e. of the rules A, CP, MPP, vI, vE, ∧I and ∧E) is described as the self-relation of what is self-identical and the recursiveness of what is self-discernible. The consistency and completeness of the self-described logical space (i.e. the logical space with negation) is described as the description of the meaning of rules, which are based upon the relation between the linearity and the delinearity and stands for either the delinear manifestation of the linearity or the linear manifestation of the delinearity. Such manifestation of the consistency and completeness is not a 'proof' but only a superfluous description of the very demonstrative manifestation of the atomic symbolic form. The so-called 'proofs' of the consistency and completeness are not proofs, but necessarily become a demonstration if the descriptive bases of such 'proofs' are described, instead of being taken for granted.

1.1.1.6.2.1.3. There are no such as 'truth' and 'falsehood' in the ordinary sense. Whatever that is demonstrable is existent. Whatever that is existent describes itself. Whatever that

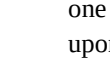
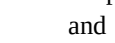
describes itself only relates to itself. If ‘truth’ and ‘falsehood’ can be described in whatever ways, then they relate to each other necessarily in such a way that they are only identical. What is describable as not ‘holding’ in the logical space indeed holds by the very descriptive necessity of its being so described. What is ‘false’ is not false if it can be so described and is therefore known why and how it is so. This is so because the description of such ‘falsehood’ is itself a demonstration. All and only those which exist, exist. What cannot be demonstrated, cannot even be described to be non-existent. The logical space underlies whatever that is conditionalized from it. This only amounts to say that everything is the demonstration of the atomic symbolic form.

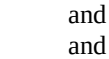
III. Schemata of Geometry, Arithmetic and Physics ;
The Epistemological Demonstration of FX ;
The Demonstration of The Conditionalization of Space and Time

III - i. 1-Dimension in itself

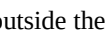
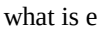
1. Epistemologicality : The logical dimensions, upon their completion, constitutes a single logical space. This is the outcome of the ontologico-notational conditionalization of FX. The logical space is essentially structural, and through the logical space FX visualizes itself as anything that satisfies  and  (i.e. as the meaning of the variable-notion p). The ontologico-notational property of FX is postulated to be such that if FX is anything, then it is describable and understandable. Having described itself through the logical space, FX is now an entity such that can recognize itself as anything that can be seen through the logical space. FX and its self-described counterpart are identical if and only if what is postulated and what is described are identical. Given the logical space, it must also be postulated now that there exists something which satisfies FX. This is so because by the meaning of self-description their identity is necessarily already established. This something is, in its relation to FX, the substance of the logical space. That is, while FX manifests itself only structurally so as to be the description of itself, this something is whatever that complies with such a structure. Therefore, anything is this something if and only if it is seen through the logical space. This something is not an entity to describe but an entity to be described ; for this something is necessarily already described through the logical space. Consequently, it is not a being whose existence is yet to be characterized in terms of its properties but an existence whose properties are descriptively already established. An existence of this sort is the value of variable-notions, which are bound by, and yet manifest, the properties of the logical space. FX is ontologico-notational, while this something is epistemological. This is so because the former is yet to be known to itself by self-description (i.e. by demonstrating its existence and simultaneously by establishing its own notation), while the latter is already known to itself by being descriptively specified through the logical space. What self-describes is ontologico-notational, and what is self-described is epistemological. Therefore, they are still one and the same, and yet their difference is in themselves (i.e. necessitated by itself).

1.1. An entity is epistemological if and only if it assumes the logical space. Therefore, the internal structure of an epistemological entity is the logical space. This entity is also collective because the logical space specifies one and only one class of entities, namely all and only those which comply with the logical space (i.e. anything). The postulated ontologico-notational anything therefore becomes, by self-description, the descriptively specified anything, which is epistemological and, with the only property of complying with the logical space, also collective. What is ontologico-notational is, if it is described, epistemological, and what is epistemological is, if it is postulated, ontologico-notational. The two depend upon each other in so far as a description is about something (i.e. most essentially about itself). Without each the other is impossible.

1.1.1. The epistemological entity, e, is collectively one, and one only ; for there exists one and only one logical space. This is so because if what is self-described based upon  and that upon  were independent, it would allow a relation between them such that is necessary , but remains indescribable. This is contrary to the initial condition. Therefore, two identical logical spaces necessarily merge into the self-described logical space, which is, so to speak, the unified field of logic and is based upon the necessary relation between  and  . Consequently, e can only be epistemologically describable through the self-described logical space, and is collectively one, and one only.

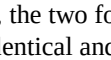
1.1.2. Being collectively one, and one only, and corresponding to  and  , e has two and only two forms of representation. This is so because if e is epistemologically describable and understandable collectively as one and only one entity that complies with the self-described logical space, then this e, if it is to be so described, must be represented as one, and only one, and is yet based upon two identical logical spaces which constitute the self-described logical space. That is, the self-described logical space consists in and of two

FX's such that each is in a different mode, but, without the other, invites a contradiction to the initial condition. This means that nothing can be said to be epistemologically describable and understandable if it is based upon FX in either mode alone. Consequently, the internal structure of e mirrors that of the self-described logical space and therefore has two identical selves such that become collectively one, and one only. The difference between this e and the notions of truth-values lies solely in e's being able to see itself through the logical space, while T and F are to make it possible for e to do so. This is also the difference between the epistemologicality and ontologico-notationality.

2. The value of variable-notions of the logic based upon  and that of the logic based upon  are identical outside the unified field. What is e for the logic based upon  and what is e for the one based upon  are one and the same in the same sense that T and F are, in themselves, identical with each other.  and  are, in themselves, identical and therefore result in two identical logical spaces. Their difference lies in their necessary relation. Consequently, the two forms of representation of e also lie in this relation. While T and F are, in themselves, identical and stand for two identical logical spaces in order to describe a necessary relation between them, e stands for the self-described logical space which is described by means of such T and F. T and F are the two and only two forms of representation of e.

2.1. While T and F exist only in order to describe a necessary relation between  and  , e is the outcome of this description. If e is FX such that, having described itself through the logical space, can now see itself, then e is necessarily such that consists in and of two and only two identical constituents and is yet collectively one, and one only. This is so because the logical space is already, by itself, epistemological. The self-described logical space is the self-imposed necessary way by which the logical space sees itself. e stands for the logical space and is necessarily made collectively one, and one only by the self-described logical space. That is, e epistemologically stands for the logical space and is epistemologically described by the way by which the logical space sees itself. The properties of e are therefore determined by relations which hold between its two identical constituents, e' and e". e' and e" stand for two identical logical spaces and are themselves epistemological entities. e' and e" relate to each other so as to represent e, necessarily in such a way that ;

(i) e' and e" are self-indiscernible ; for both are, in themselves, identical,

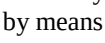
(ii) e' and e" discern themselves by associating themselves with two identical logical spaces, one of which is based upon  , the other, upon  ; for both are to comply with the logical space and therefore with the internal structure of the self-described logical space,

(iii) e' and e" cannot be in themselves ; for, otherwise, it would allow two independent identical logical spaces and therefore would contradict the initial condition.

From (i), (ii) and (iii) it follows that :

I : e' determines e" : T leads its relation with F.

II : e" determines e' : F leads its relation with T.

I and II rest upon the ontologico-notational fact that the relation between T and F remains identical either way. This also means that (I) the matrix of p is {T, F} if and only if that of ~p is {F, T}, (II) the matrix of p is {F, T} if and only if that of ~p is {T, F}. This relation between T and F in terms of e is external and epistemological in the sense that it is valid only on the basis of the ontologico-notational knowledge of negation. By the meaning of negation the internal structure of the self-described logical space remains identical regardless of the two ways of representing the matrix of p.  and  are, in themselves, identical, and yet by the descriptive necessity of initiation the existence of each unilaterally underlies that of the other. The relation between them is that of the otherwise-ness and generates an identical self-described logical space. If there necessarily exist two identical logical spaces, and if they necessarily merge into the self-described logical space so as not to contradict the initial

condition, then there exist e' and e" such that are, in themselves, identical, but cannot be in themselves. Either of, but necessarily one and only one of, e' and e", is associated with −◯◯− and simultaneously determines the other association. Therefore, it follows that I or II. I and II may be called ‘directions’.

2.1.1. e can only be epistemologically described in terms of both I and II. Neither of I and II can be, by itself, the description of e ; for, otherwise, there would be two independent, identical descriptions of e. This contradicts the initial condition because no relations can be described between them.

2.2. Both I and II represent e, but neither is, on its own, the description of e. Therefore, the description of e is to be found in the way by which I and II relate to each other. If both I and II represent e, then they are not self-discernible because they can only be seen in terms of e. This also means that if both I and II identically represent e, but remain distinct from each other, then I and II are first to discern themselves. The ways by which I and II discern themselves are the relations between them. Consequently, the description of e is identical with the necessary ways by which I and II discern themselves. This is so because if I and II are self-indiscernible, then they can only discern themselves by relating to each other. Relations between I and II are identical with relations of relations between e' and e". The description of e is the 1-dimension in itself and is the fundamental framework of epistemological understanding.

3. e' and e" manifest themselves as e by each’s determining the other. The 1-dimension in itself consists of e' and e" and consists in relations which hold in and between such e. e is the representational output of I and II.

3.1. The output of I and II is represented as follows :

I : → : $e' \overset{e}{\rightharpoonup} e''$

II : ← : $e' \overset{e}{\leftharpoondown} e''$

I and II are epistemologically discerned by each’s existence underlying that of the other. The possibility, →, that e' determines e" so as to represent e, necessarily, in itself, implies the other possibility, ←, that e" determines e' so as to represent e, and vice versa. If I discerns itself as →, and II, as ←, then their relation is that of a possibility and its counter-possibility and therefore also holds the other way around. Consequently, it is also possible that I discerns itself as ←, and II, as →, in either way identically representing e. If → holds, then ← necessarily also holds, and vice versa.

3.2. Given →, it, in itself, implies that it could have been ←, and therefore :

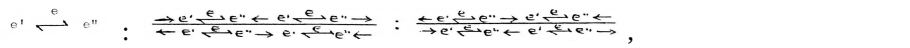
→← : $e' \overset{e}{\leftharpoondown\rightharpoonup} e''$

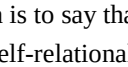
Given ←, it, in itself, implies that it could have been →, and therefore :

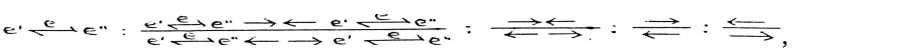
←→ : $e' \overset{e}{\leftharpoondown\rightharpoonup} e''$

3.2.1. Such as →→ and ←← are impossible ; for the reason for representing what is already represented cannot be described without a descriptive necessity. That is, a relation between what is represented and what is repeatedly represented without a necessity, is indescribable. Or, it can only be that of self-identity.

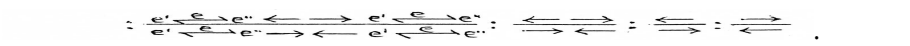
3.3. →← and ←→ describe e as one and the same $e' \overset{e}{\leftharpoondown\rightharpoonup} e''$. This is so because what, in itself, could have been otherwise so as for each to be the other, is necessarily one and the same. Therefore, →← and ←→ are the necessary, natural extension of the given meaning of → and ←. → and ← consist in relations between e' and e". This means that the description of e, $e' \overset{e}{\leftharpoondown\rightharpoonup} e''$, has an internal structure :

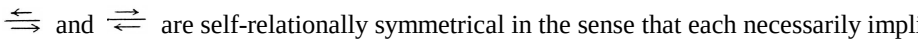


which is to say that by →← or by ←→  remains identical and is therefore uniform (i.e. self-relationally symmetrical). Therefore, given as the only and identical description of e, it necessarily, in itself, embodies two possibilities of being such an itself. That is, given , →← implies ←→, and ←→ implies →←. This is identical with saying that given by →←, it derives ←→ out of itself by the fact of its existence, or it exists by ←→ and derives →← out of itself. This is so because can be given identically by either of →← and ←→ and remains one and the same description of e. Therefore, once it is given in either way, its existence manifests the other as the necessary potential possibility of being an identical self (i.e. so to speak, as its structure). That is, exists necessarily either by →← or by ←→, and consequently its existence necessarily, in itself, embodies non-specifically either of →← and ←→ and, relating to such an itself, implies the other as its own potential, while preserving its self-identity in either way. Therefore, given , it has an external structure :



which is self-relationally symmetrical and is therefore :



 and are self-relationally symmetrical in the sense that each necessarily implies the other, and therefore that both are necessarily existent. →← and ←→ can only be described in contrast to each other. This means that →← is described as if it is →, and ←→, as if it is ←, or the other way around. Consequently, given , both and are separately discernible and yet simultaneously coexistent. If there is a form such that governs and , then :

: {v, Λ}.

This means that ;

(i) e underlies the self-described logical space and is therefore anything that satisfies the self-described logical space, but is not the self-described logical space itself,

(ii) consequently, if both and represent e and therefore have an identical meaning, but are nevertheless distinctly discernible from each other, then they are identifiable with two variable-notions such that are identical with each other and are subject to the self-described logical space,

(iii) this being so because the self-described logical space is what the logical space describes itself and makes itself its own value (i.e. because e is a value of p in the sense that both the self-described logical space and the logical space descriptively converge in p),

(iv) given two p's such that are identical in meaning, but nevertheless remain distinct from each other, their relation is necessarily indescribable ; for the logical 0-dimension accommodates one and only one p,

(v) this, however, is identical with saying that p only linearly implies itself ; for once the internal structure of the self-described logical space and of the logical space is understood, the linear self-implication of p leads itself to the possibility of TΛT or FΛF, which epistemologically contrasts itself to the impossibility of TΛF,

(vi) consequently, the relation between two p's is epistemologically described as anything between which v and Λ identically hold without changing their meaning ; for the meaning of v

and ∧ lies in the delinearity and therefore does not hold between two p's,

(vii) v and ∧, however, have their own descriptive necessity, and therefore neither is reducible into the other,

(viii) this epistemologically means that v and ∧ identically hold between two p's and yet maintain their difference on the basis of their ontologico-notational meaning,

(ix) given the self-described logical space and the logical space, v and ∧ necessarily coexist by the irreducibility between them,

(x) such coexistence is simultaneous when they hold between two p's because they are not holding, and therefore because their meaning is only seen in themselves,

(xi) v and ∧ are together the form of simultaneous coexistence when they hold between two p's,

(xii) two p's are related to each other in terms of v and ∧ in such a way that they simultaneously coexist.

The external structure of $e' \overset{e}{\longleftrightarrow} e''$ is therefore described as what logically follows between two identical variable-notions (i.e. as the form of simultaneous coexistence). The meaning of v and ∧ is such that if pvp from p, then p∧p confirms that both disjuncts are identical with the initial p.

3.3.1. Therefore, if $\overleftarrow{\Rightarrow}$ and $\overrightarrow{\Leftarrow}$ are identical, then both v and ∧ follow between them and operationally identify their identity by means of the necessity for their simultaneous coexistence. v and ∧ hold between them as identical, yet distinct, relations. This is so because v and ∧ do not distort the identity between $\overleftarrow{\Rightarrow}$ and $\overrightarrow{\Leftarrow}$ and are yet different from each other in their given ontologico-notational meaning. Therefore, if $\overleftarrow{\Rightarrow}v\overrightarrow{\Leftarrow}$, then simultaneously $\overleftarrow{\Rightarrow}\wedge\overrightarrow{\Leftarrow}$, and vice versa.

3.3.2. Given $\overleftarrow{\Rightarrow}v\overrightarrow{\Leftarrow}$ and $\overleftarrow{\Rightarrow}\wedge\overrightarrow{\Leftarrow}$ as showing the identity between $\overleftarrow{\Rightarrow}$ and $\overrightarrow{\Leftarrow}$, they are to identify themselves as the form of simultaneous coexistence. This is so because $\overleftarrow{\Rightarrow}$ and $\overrightarrow{\Leftarrow}$ are asserted into $\overleftarrow{\Rightarrow}v\overrightarrow{\Leftarrow}$ and $\overleftarrow{\Rightarrow}\wedge\overrightarrow{\Leftarrow}$ as being identical by means of v and ∧ as applied to two p's, and because neither meaning of v and ∧ follows the other when they are applied to two p's. For this reason the meaning of v and ∧ can only be seen epistemologically (i.e. on the basis of the understanding of their ontologico-notational meaning).

3.3.2.1. The relation between $\overleftarrow{\Rightarrow}v\overrightarrow{\Leftarrow}$ and $\overleftarrow{\Rightarrow}\wedge\overrightarrow{\Leftarrow}$ is transcendental in the sense that they are descriptively incommensurable to each other ; for there is nothing in terms of which the identity between $\overleftarrow{\Rightarrow}v\overrightarrow{\Leftarrow}$ and $\overleftarrow{\Rightarrow}\wedge\overrightarrow{\Leftarrow}$ can be asserted. $\overleftarrow{\Rightarrow}v\overrightarrow{\Leftarrow}$ and $\overleftarrow{\Rightarrow}\wedge\overrightarrow{\Leftarrow}$ are an epistemological application of the ontologico-notational meaning of v and ∧. Therefore, their epistemological relation can only be seen through their ontologico-notational relation. That is, only on the basis of their ontologico-notationality in its wholeness the relation between $\overleftarrow{\Rightarrow}v\overrightarrow{\Leftarrow}$ and $\overleftarrow{\Rightarrow}\wedge\overrightarrow{\Leftarrow}$ can be epistemologically taken for granted. If each of $\overleftarrow{\Rightarrow}v\overrightarrow{\Leftarrow}$ and $\overleftarrow{\Rightarrow}\wedge\overrightarrow{\Leftarrow}$ is identified in terms of the other, then it becomes a 'constant'. A 'constant' can only be described in its own system and is identical with FX. That is, v and ∧ are yet to describe themselves if they do not have a relation between them. Consequently, $\overleftarrow{\Rightarrow}v\overrightarrow{\Leftarrow}$ and $\overleftarrow{\Rightarrow}\wedge\overrightarrow{\Leftarrow}$ only simultaneously identify each other.

3.3.3. $\overleftarrow{\Rightarrow}$ and $\overrightarrow{\Leftarrow}$ collectively refer to one and only one e and describe this e as two, identical 'points'. 'Points' are schematic entities which are governed by the given structure of the description of e. They schematically present this structure. The substance of a schematic entity is a structure in which it exists.

3.3.3.1. e is described as ‘points’ because → and ← are relations, which do not hold by themselves. However, ‘points’ are different from e' and e". ‘Points’ are anything between which both → and ← hold simultaneously, while e' and e" are primarily to describe such → and ←. ‘Points’ are anything which is to be described by → and ←, based upon their innate necessity.

3.4. The most fundamental epistemological structure is therefore that of the most basic epistemological description, which is conditionalized from the most basic ontologico-notational self-description. What is epistemologically describable has twofold forms of description, by either of which it can be presented as being identical. What is thus presented by each has the other as its own potential. Each of twofold forms of description embodies itself as an existence and implies the other as its own structure.

3.5. Allowing ‘points’ as entities such that schematically present the epistemological structure of the ontologico-notational self-description, →← may be, for an illustrative purpose, called as the form of attraction, and ←→, as the form of repulsion. ‘Points’ are collectively identical with e. Their multiplicity is due to their given form only in which they are meaningful.

4. The 1-dimension in itself is therefore presented as $e' \overset{e}{\leftrightarrows} e''$, which has the internal structure of self-relational symmetry and the external structure of simultaneous coexistence.

III - ii. Schemata

1. Schemata are necessarily the description of the structure of description and notationally depict the laws which anything must comply in order to exist epistemologically. They are the external presentation of the internal structure of $e' \overset{e}{\leftrightarrows} e''$. $e' \overset{e}{\leftrightarrows} e''$ has two distinct forms of description, by either of which it remains identical. It is such self-identity of $e' \overset{e}{\leftrightarrows} e''$ that maintains the identity of its own epistemological existence. The distinctness of its two forms is internally described as the self-identity of their output because they embody themselves as their own output. Consequently, $e' \overset{e}{\leftrightarrows} e''$ is internally complete and externally (i.e. relating to the initial condition) incomplete. This is so because the distinctness of the procedures by which it externally presents itself, cannot be, once the presentation is made, found in what is thus externally presented, due to the descriptive identity between two outcomes.

1.1. The internal structure of $e' \overset{e}{\leftrightarrows} e''$ is its self-identity. However, the two distinct forms which generate such identity, are yet to be described in their relation to their identical output of $e' \overset{e}{\leftrightarrows} e''$. Therefore, the external incompleteness of $e' \overset{e}{\leftrightarrows} e''$ is conditionalized from and by the internal completeness of $e' \overset{e}{\leftrightarrows} e''$. The initial condition requires such incompleteness to be satisfied.

1.2. →← and ←→ generate an identical $e' \overset{e}{\leftrightarrows} e''$. Consequently, the existence of this identical $e' \overset{e}{\leftrightarrows} e''$ is, not only in itself but also by itself (i.e. relating to itself as such an existence), to describe not only the internal identity but also the external identity, between →← and ←→. That is, the internal structure of $e' \overset{e}{\leftrightarrows} e''$ is descriptively required to present itself so as to describe the relation between its self-identity and the distinctness of the two forms which generate this self-identity. The internal structure of $e' \overset{e}{\leftrightarrows} e''$, if it is described, becomes the external structure of $e' \overset{e}{\leftrightarrows} e''$.

1.2.1. This requirement is the descriptive necessity for $e' \overset{e}{\leftrightarrows} e''$ to describe itself not only internally but also externally as an identical whole.

1.2. The internal wholeness of $e' \overset{e}{\leftrightarrows} e''$ is its self-identity, while the external wholeness is the description of this self-identity. Schemata are therefore the descriptive ‘spatialization’ of this self-identity. That is, only in a ‘space’ $e' \overset{e}{\leftrightarrows} e''$ can see itself externally as an identical

whole. In whatever way $e' \overset{e}{\longleftrightarrow} e''$ may see itself, that way is a ‘space’. A ‘space’ is the description of the self-identity of $e' \overset{e}{\longleftrightarrow} e''$.

1.3.1. A space is therefore generated out of the internal structure of $e' \overset{e}{\longleftrightarrow} e''$. This is identical with saying that $e' \overset{e}{\longleftrightarrow} e''$ schematizes itself in order to see itself externally as an identical whole. This schematization holds in order to comply with the initial condition (i.e. of the describability).

1.3.2. What is a schema is therefore identical with the schematized $e' \overset{e}{\longleftrightarrow} e''$ (i.e. $e' \overset{e}{\longleftrightarrow} e''$ with its internal and external wholeness). Consequently, there can be no such as an empty schema. Whenever it exists, it is necessarily substantial and is therefore about something. There can be no space without entities.

1.4. This schematization is solely based upon the innate necessity of $e' \overset{e}{\longleftrightarrow} e''$ to describe itself and strictly within the given meaning of $e' \overset{e}{\longleftrightarrow} e''$.

1.4.1. The most fundamental schema is a schema which ‘spatializes’ the self-identity of $e' \overset{e}{\longleftrightarrow} e''$.

III - iii. Schema of Geometry

1. 1-Dimension : The internal structure of $e' \overset{e}{\longleftrightarrow} e''$ is to say that $e' \overset{e}{\longleftrightarrow} e''$ remains descriptively identical regardless if e is described by →← or by ←→. This is so because →← and ←→ are the relations of relations between e' and e", which are, in themselves, one and the same, and are therefore to describe each other, and nothing else. If either of →← and ←→ is possible, then the other is also necessarily possible, while both giving rise to a same $e' \overset{e}{\longleftrightarrow} e''$. Consequently, given $e' \overset{e}{\longleftrightarrow} e''$ by →← or by ←→, both →← and ←→ necessarily hold in and between a same $e' \overset{e}{\longleftrightarrow} e''$. This means that what is internally one and the same $e' \overset{e}{\longleftrightarrow} e''$, has externally two relations which hold in and between the internally identical self.

1.1. The external structure of $e' \overset{e}{\longleftrightarrow} e''$ is therefore to say that the internal structure of $e' \overset{e}{\longleftrightarrow} e''$ (i.e. the self-identity of $e' \overset{e}{\longleftrightarrow} e''$ regardless of its two distinct forms of description) is possible if and only if both →← and ←→ hold in and between a same $e' \overset{e}{\longleftrightarrow} e''$; for $e' \overset{e}{\longleftrightarrow} e''$ can be given non-specifically by either of →← and →←. This means that once $e' \overset{e}{\longleftrightarrow} e''$ is given, both of →← and →← are to hold in the existence of $e' \overset{e}{\longleftrightarrow} e''$. Therefore, →← and ←→ are necessarily together to form a single set of two unilateral self-relations of $e' \overset{e}{\longleftrightarrow} e''$. They are unilateral because they are distinctly discernible from each other. They are self-relations because a same $e' \overset{e}{\longleftrightarrow} e''$ holds by →← or by ←→, and therefore because given $e' \overset{e}{\longleftrightarrow} e''$, both →← and ←→ holds in and between a same $e' \overset{e}{\longleftrightarrow} e''$.

1.1.1. What is internally $e' \overset{e}{\longleftrightarrow} e''$ based upon →← and implied by ←→, or based upon ←→ and implied by →←, is externally what is →← and what is ←→, and vice versa. →← and ←→ imply each other, while $e' \overset{e}{\longleftrightarrow} e''$ remains identical.

1.1.1.1. $e' \overset{e}{\longleftrightarrow} e''$ is internally identical, while →← and ←→ are externally identical. What is $e' \overset{e}{\longleftrightarrow} e''$ is what is →← and ←→, vice versa.

1.1.1.2. $e' \overset{e}{\longleftrightarrow} e''$ is an identical output of →← and ←→. Therefore, given $e' \overset{e}{\longleftrightarrow} e''$, →← and ←→ are a set of two unilateral self-relations of a same $e' \overset{e}{\longleftrightarrow} e''$.

1.1.2. Such self-relations, in order to be described, requires $e' \overset{e}{\longleftrightarrow} e''$ to present itself as multiple and yet identical entities between which these self-relations hold. That is, the internally

identical $e' \overset{e}{\longleftrightarrow} e''$ 'spatializes' itself so that these self-relations can be made describable. In this sense a space is necessarily and essentially descriptive. A space is the epistemological field of self-description. The most fundamental schema is therefore the spatialized self.

1.1.3. The spatialized $e' \overset{e}{\longleftrightarrow} e''$ is 'points', which are therefore essentially schematic entities. There can be no such as 'a single point'. All 'points' collectively refer to the spatialized $e' \overset{e}{\longleftrightarrow} e''$ so as between them to descriptively present those self-relations which hold in and between that identical $e' \overset{e}{\longleftrightarrow} e''$. They therefore only schematically exist in order to describe those self-relations which hold in and between a same $e' \overset{e}{\longleftrightarrow} e''$. Such self-relations can be described between two points. Each point necessarily underlies the existence of the other. Points are necessarily structural. There can also be no such as 'a point in itself'. Points only have a collective meaning which is given by their schema. Points therefore cannot be independent from each other. Without a structure between them they are either meaningless or the same as that identical $e' \overset{e}{\longleftrightarrow} e''$ itself. With a structure between them they are multiple and identical, and their meaning is the schematized, described $e' \overset{e}{\longleftrightarrow} e''$.

1.1.3.1. It also follows that there can be no such as a schema in itself. A schema is a descriptive space, which is, without schematic entities, not only empty but also altogether descriptively non-existent. Schemata are the self-description of e and are therefore also the epistemological demonstration of the ontologico-notational FX. The self-spatialization is therefore due to a descriptive necessity which is based upon the describability required by the initial condition, so as for anything to be 'anything'.

1.2. $\overset{\leftarrow}{\Rightarrow}$, which internally means the self-identity of $e' \overset{e}{\longleftrightarrow} e''$, externally describes $e' \overset{e}{\longleftrightarrow} e''$ as multiple and identical points, between which →← and ←→ hold unilaterally because of their descriptive distinctness, and as a set because of their relational simultaneity (i.e. mutual implication). Therefore, the existence of $\overset{\leftarrow}{\Rightarrow}$ necessarily underlies that of $\overset{\rightarrow}{\Leftarrow}$, and vice versa. $\overset{\leftarrow}{\Rightarrow}$ and $\overset{\rightarrow}{\Leftarrow}$ are correlated in such a way that $\{\overset{\leftarrow}{\Rightarrow} \mathrm{v} \overset{\rightarrow}{\Leftarrow}, \overset{\leftarrow}{\Rightarrow} \Lambda \overset{\rightarrow}{\Leftarrow}\}$.

1.2.1. Two and only two points are descriptively required. This is so because points are schematic entities and therefore exist only in order to describe the self-relations which hold in $e' \overset{e}{\longleftrightarrow} e''$. Such self-relations can be described between two identical points which collectively refer to a same $e' \overset{e}{\longleftrightarrow} e''$. Points which are not required for this description are merely non-existent because their existence contradicts the initial condition.

1.2.2. →← and ←→ form a set and hold between same two points, which collectively refer to a same $e' \overset{e}{\longleftrightarrow} e''$. Consequently, given two and only two points, both →← and ←→ hold between them in such a way that they are distinctly discernible from each other and yet simultaneous. This descriptively appears as if each unilaterally determines the other. →← and ←→ are externally to say that if either holds between two points, then the other necessarily also holds between the same two points. This results in a set which contains two and only two points on the basis of their properties of the internal identity and the external describability.

1.2.3. Both the existence of →← and ←→ and the ways of their existence are demonstrated in the 1-dimension in itself. The schema of deriving points out of $e' \overset{e}{\longleftrightarrow} e''$ is therefore not to 'prove' if and how →← and ←→ hold, but to describe why $e' \overset{e}{\longleftrightarrow} e''$ remains self-identical regardless if it is by →← or by ←→. The internal relations between →← and ←→ results in one and the same description of e. The self-identity of $e' \overset{e}{\longleftrightarrow} e''$ is described by making such internal relations external. The meaning of $e' \overset{e}{\longleftrightarrow} e''$ is that ;

(i) e' determines – following the relations between what is  and what is  – e" and therefore represents e,

(ii) e" determines e' and therefore represents e,

(iii) each e, in itself, implies the other because of the self-indiscernibility between e' and e" and therefore results in the descriptive self-identity of both representations of e.

Consequently, if there is a schema such that allows $e' \overset{e}{\longleftrightarrow} e''$ to derive identical entities out of itself, then such entities externally manifests the internal structure of $e' \overset{e}{\longleftrightarrow} e''$ (i.e. the self-identity of $e' \overset{e}{\longleftrightarrow} e''$). Such a schema is therefore the descriptive manifestation of the innate necessity of $e' \overset{e}{\longleftrightarrow} e''$ to describe its internal self-identity in its relation to its two distinct, external forms of description. That is, $e' \overset{e}{\longleftrightarrow} e''$ holds identically by →← or by ←→, and therefore given $e' \overset{e}{\longleftrightarrow} e''$, both →← and ←→ hold in $e' \overset{e}{\longleftrightarrow} e''$. This internally necessitates $e' \overset{e}{\longleftrightarrow} e''$ to describe its self-identity in terms of and in its relation to →← and ←→.

1.2.4. $e' \overset{e}{\longleftrightarrow} e''$ is given because if $e' \overset{e}{\longleftrightarrow} e''$ holds identically by →← or by ←→, then it is descriptively necessary to identify $e' \overset{e}{\longleftrightarrow} e''$ by →← with $e' \overset{e}{\longleftrightarrow} e''$ by ←→, despite that their identity is internally already established in terms of the mutual implication between →← and ←→, due to the self-indiscernibility between e' and e". $e' \overset{e}{\longleftrightarrow} e''$ is therefore given by the initial condition (i.e. the describability). That is, $e' \overset{e}{\longleftrightarrow} e''$ must be describable to be self-identical not only internally (i.e. by the describability of → and ←) but also externally (i.e. by itself in terms of and in its relation to its internal structure). $e' \overset{e}{\longleftrightarrow} e''$ is therefore given by its own innate necessity of description (i.e. by itself).

1.2.4.1. In any specified theories, if something follows something, then this can be ‘proved’ by means of what is taken for granted by both of those something (i.e. by presenting a schema such that is capable of coherently locating both those something within its structure and is therefore capable of taking both those something as its values). This is so because a schema descriptively acknowledges what is axiomatically taken for granted in it. Consequently, anything which fits into the structure of such a schema can be described by means of this structure in such a way that one which occupies a less basic structural position follows from one which occupies a more basic position. However, in a general theory such as this there can be no such as a ‘proof’ ; for nothing is taken for granted in it. A general theory describes not something which satisfies what is axiomatically taken for granted, but indeed anything. It proceeds only by complying with a condition such that its generality excludes any possibilities of refutation within that generality. Such generality is irrefutable if and only if it coincides with human limitations and therefore must be demonstrated for its claim of validity. This demonstration consists in describing whatever that is describable, and therefore embodies such limitations ; for by describing all and only those which are describable it, by demonstration, manifests all those which are not describable. Anything is describable if it exists and is not yet described. This is so because if it exists, then it is describable to exist. The ways by which it is described, are also the ways by which it exists. Anything exists only by demonstration (i.e. by describing itself). Therefore, anything which exists also has the innate necessity of self-description. Whatever that exists necessarily complies with this innate necessity. If whatever that exists is also describable, and vice versa, then it can only be given by itself ; for anything is existent if and only if it can describe itself. Therefore, if $e' \overset{e}{\longleftrightarrow} e''$ exists, then it is to describe whatever that is describable out of itself.

1.2.5. $e' \overset{e}{\longleftrightarrow} e''$ holds identically by →← or by ←→. Therefore, given $e' \overset{e}{\longleftrightarrow} e''$ as necessitated by itself, by →← or by ←→, both →← and ←→ necessarily hold in the existence of $e' \overset{e}{\longleftrightarrow} e''$. $e' \overset{e}{\longleftrightarrow} e''$ necessitates itself to come into existence, and its coming into existence is its sole purpose ; for its coming into existence as necessitated by itself also means its descriptively establishing itself as such an existence.

1.2.5.1. The schema of deriving points out of $e' \overset{e}{\longleftrightarrow} e''$ (i.e. out of the existence of $e' \overset{e}{\longleftrightarrow} e''$) is

therefore necessitated by what necessitates $e' \overset{e}{\longleftrightarrow} e''$ to describe itself (i.e. by its own existence). If →← and ←→ hold in the existence of $e' \overset{e}{\longleftrightarrow} e''$, and if the existence of $e' \overset{e}{\longleftrightarrow} e''$ is to describe itself in terms of and in its relation to its innate necessity (i.e. in terms of and in its relation to the internal relations between →← and ←→), then it is descriptively necessary for the existence of $e' \overset{e}{\longleftrightarrow} e''$ to spatialize itself (i.e. to transform itself into such entities that are multiple and identical and collectively refer to the existence of $e' \overset{e}{\longleftrightarrow} e''$), so that →← and ←→ can be described to hold in the existence of $e' \overset{e}{\longleftrightarrow} e''$ (i.e. between two identical selves of the existence of $e' \overset{e}{\longleftrightarrow} e''$). That is, the internal relations between →← and ←→ can be externally described if and only if →← and ←→ can be described to hold separately between two identical entities, and yet between same two entities. This schema is due to the describability and is therefore not arbitrary but necessary. This schema is required so that FX can epistemologically describe itself. It is therefore a necessary extension of the meaning of the ontologico-notationally self-described FX, based upon the describability. Points are necessarily entities such that are multiple and identical and only collectively stand for an identical meaning. Two and only two of them are required because →← and ←→ which hold in the existence of $e' \overset{e}{\longleftrightarrow} e''$ are binomial relations and therefore can be made descriptively visible by two and only two points, which consequently satisfy the describability. Two and only two sets of two and only two points are required because there are →← and ←→.

1.1. I : It is demonstrated that in the 1-dimension in itself that $e' \overset{e}{\longleftrightarrow} e''$ always necessarily remains identical whether it is by →← or by ←→, due to the internal relations between →← and ←→. On the basis of this it follows that :

I-I : There is a schema such that, given $e' \overset{e}{\longleftrightarrow} e''$ by itself, derives points out of the existence of $e' \overset{e}{\longleftrightarrow} e''$ so as to describe the self-identity of $e' \overset{e}{\longleftrightarrow} e''$ in terms of and in its relation to →← and ←→. This is so because the self-identity of $e' \overset{e}{\longleftrightarrow} e''$ is generated by the internal relations between →← and ←→, and therefore because given $e' \overset{e}{\longleftrightarrow} e''$ by itself in such a way as to take the form of either →← or ←→, both →← and ←→ necessarily hold in the existence of $e' \overset{e}{\longleftrightarrow} e''$. That is, $e' \overset{e}{\longleftrightarrow} e''$, by itself, describes its self-identity necessarily in terms of and in its (as an existence) relation to →← and ←→, which are holding in and between a same $e' \overset{e}{\longleftrightarrow} e''$ itself. If points are, given $e' \overset{e}{\longleftrightarrow} e''$, what describe the self-identity of $e' \overset{e}{\longleftrightarrow} e''$ and its cause, then it is descriptively necessary that :

I-I-i : Points are identical with each other because without any relations between them they are identical with $e' \overset{e}{\longleftrightarrow} e''$ itself.

I-I-ii : There are two and only two points because →← and ←→ hold in the existence of $e' \overset{e}{\longleftrightarrow} e''$ and therefore hold between identical points, as self-relations. A self-relation is necessarily binomial because a multinomial self-relation, if there should be, can only be circular or reducible into binomial ones which are related to one another in terms of the identity of the nominative. Consequently, in either way a multinomial self-relation amounts to a self. This means that if a self-relation is describable and is therefore meaningful, then it can only be binomial and therefore requires two and only two points.

I-I-iii : Points are anything which are identical and multiple (in this case they are two in accordance with a descriptive necessity) and collectively stands for a same meaning.

I-II : If →← and ←→ hold as self-relations between two identical points, then there are two and only two schemata which give rise to two identical points. This is so because →← and ←→ cannot be described to hold simultaneously between same two points. From this it follows that it is descriptively necessary that :

I-II-i : Two identical points are only given by the schema of I-I.

I-II-ii : There is a set of two identical points between which →← holds as a self-relation, and there is another set of two identical points between which ←→ holds as a self-relation.

I-II-iii : Two sets of two identical points (i.e. two schemata which give rise to two identical points) are identical with each other.

I-III : If there are two schemata, and if they are identical, then in order to be two what holds in each schema is externally different not only from each other but also on its own absolutely, and in order to be identical what holds in each schema is internally identical with each other. This is so because what is demonstrated to be internally identical with each other (i.e. in terms of the internal relations between →← and ←→), can be different only externally from each other (i.e. in terms of the external relations between →← and ←→ in their relation to the self-given $e' \overset{e}{\longleftrightarrow} e''$). Therefore, it is descriptively necessary that :

I-III-i : The relation in and between that which is internally identical and externally different, is descriptive and is manipulated from within what is already demonstrated, in accordance with descriptive necessities. This is so because by the initial condition nothing exists if it is not describable, and therefore because anything, if it is anything at all, must be describable. Consequently, if it is demonstrated that $e' \overset{e}{\longleftrightarrow} e''$ is existable, then it is descriptively also necessary that this existence is describable. Whatever that is existable, must exist and be so describable.

I-III-ii : What is internally identical, is already demonstrated.

I-III-iii : What is externally different, is therefore the descriptive appearances of what is internally identical. That is, they are different only as descriptions and are therefore different absolutely in each schema, which is independent from, and identical with, each other.

I-IV : What is internally identical, is externally different because →← can be described as what is initiated by →, and ←→, as what is initiated by ←. Therefore, it is descriptively necessary that :

I-IV-i : →← is described as what is initiated by →, so as to be externally different not only from ←→ but also schematically on its own.

I-IV-ii : ←→ is described as what is initiated by ←, so as to be externally different not only from →← but also schematically on its own.

I-IV-iii : These two schemata are independent from each other and yet identical with each other.

I-V : Given two points in each of such schemata, they are described to hold by the initiation of → between them in one schema, and by the initiation of ← in the other. They are yet same two points because their schema is necessarily identical. Therefore, given same two points, →← holds between them as if one determines the other, while ←→ holds between them as if it goes the other way around. This is so because in each schema itself what is → and what is ← are not discernible to be different due to their self-indiscernibility and independent absoluteness. However, if two schemata are necessarily identical and yet remain two, then what is absolutely → and what is absolutely ← in each schema, must be different on their own as well as from each other, despite of their absoluteness. This is so because, otherwise, two identical schemata cannot be described to be two and therefore contradict their own descriptive necessity. Therefore, it is descriptively necessary that :

I-V-i : Two identical points do exist. This is the same as saying that it is demonstrated that there is a schema such that necessarily gives rise to such points.

I-V-ii : Two sets of two identical points do exist and are identical, based upon the descriptive necessity that →← and ←→ hold between same two identical points and must be so

described.

I-V-iii : Such two points hold as if one determines the other, and also as if it goes the other way around. This is so because they exist in order to describe the external difference between →← and ←→, which are internally identical.

I-VI : Given same two identical points by two identical and independent schemata, they hold as if one determine the other, and also as if it goes the other way around. This is necessarily so because →← and ←→ need to describe their external difference. On the basis of this the meaning of 'as if' is that points, if they are to exist, can only be described in this way. The internal identity between →← and ←→ externally presents itself only by means of such 'as if'. Two sets of two points are independent from each other in the sense that each, in itself, self-contains the other and is complete by itself. That is, given only a set of two points, not both →← and ←→ can be described to hold between them simultaneously, while →← and ←→ are, by their given meaning, such that if either is possible, then the other is also necessarily possible. Consequently, two sets of same two points are required by the describability, so that both →← and ←→ are describable to hold between same two points. Neither of the two sets supersedes the other in the same sense that neither of →← and ←→ supersedes the other because they are internally identical, and because the existence of each underlies that of the other. Each of →← and ←→ is complete by itself because its meaning already contains that of the other. What is complete by itself is independent. However, they exist as if they are externally related to each other. This is so because there must be two schemata if there exist two sets of same two points, and because these two schemata are necessarily independent from, and identical with, each other. They are independent because no relations are descriptively possible between two identical schemata, and they are identical because →← and ←→ are internally identical and therefore necessarily hold between same two points. This also means that the two sets are one and the same because nothing can be independent from itself. The two sets of same two points are therefore, by the describability, externally independent from each other, and internally identical with each other. Therefore, representing a point by • :

I-VI-i : →← : •→• : → : Given two points, they hold as if one determines the other so as to externally differentiate →← from ←→, both of which are internally identical. This '→' (i.e. → which holds between two identical points) may be called a 'schematic direction', while in this context → which holds between e' and e", may be called a 'demonstrative direction'. The former is descriptively based upon the latter.

I-VI-ii : ←→ : •←• : ← : Given same two points, they hold as if one determines the other in such a way that it goes the other way around from I-VI-i, so as to externally differentiate ←→ from →←, both of which are internally identical. This '←' (i.e. ← which holds between two identical points) is also a 'schematic direction', while ← which holds between e' and e" is also a 'demonstrative direction'.

I-VI-iii : → and ← hold necessarily the other way around from each other. This is so because their schema is described to be identical, and because there are two of it. In order for their identical schema to be discernible as two → and ← hold necessarily in such a way that →← and ←→ are differentiative from each other. →← and ←→ are internally identical, and their difference is only external. This necessarily means that such difference can only be described in terms of what externally constitutes →← and ←→ (i.e. in terms of demonstrative directions). Therefore, the external difference between →← and ←→ is identified with that between the demonstrative directions. This identification is due to the describability, and therefore the schematic directions are generated by the describability.

I-VII : The two points between which → holds and those between which ← holds, are identical with each other and are therefore to be identified under a same schema. That is, the two identical schemata which give rise to →← and ←→, must be necessarily described as an identical schema. The two identical schemata are necessarily independent from each other by a descriptive necessity. This means that the schema in which these two independent, identical schemata are to be described as identical, cannot be described. Such a schema can only be this

demonstration itself and is therefore not to be described but to describe itself ; for descriptive necessities can only be demonstrated. Consequently, the validity of such a schema can only be the demonstrated fact that these two identical schemata are necessary if anything is to be describable at all. If this demonstration is itself the descriptive presentation of such a schema, then the assumption of the impossibility of the independence between these two identical schemata leads itself into the impossibility of any self-descriptions and therefore of any descriptions. If this very demonstration is not accepted, then it inevitably follows that it cannot even be described that this demonstration is not valid. Therefore, accepting this very demonstration, these two independent schemata are necessarily identical and are therefore to be so demonstrated :

I-VII-i : Given →←, and given ←→, therefore given →← and ←→, →← and ←→ are independent from, and identical with, each other. Representing this by ⇄ ⇆, →← and ←→ respectively hold between two points and are therefore represented by : ⇉⇇ :. These two sets of two points consists of same two points and therefore descriptively require the internally identical →← and ←→ to be externally different from each other, so that they can be described to hold between same two points. Therefore : ⇉⇇ : is : ⟶ :, and : ⟶ : is · ⟹ ·, in which — stands for the identity between those two sets of two points. Once given → and ← in their relation to each other, · ⟹ · is ⟹ because the meaning of points is incorporated into the relation between → and ←. ⟹ is the representation of the two sets of same two points which are now identified as an identical set. ⟹ is ⟸ because the relation between → and ← is such that they hold the other way around to each other. Consequently, given two sets of two points, and if those two sets are identical with each other, then the two points are described as ⟹, which is to say that the two points symmetrically relate to each other as if each determines the other. That is, given any two points, they are described as anything which appears as if each unilaterally relates to the other. The meaning of this description is necessarily external and therefore refers not to the relation of mutual-determination but to the relation of such a relation (i.e. the descriptive symmetry between two unilateral self-relations). It says that there are points which are identical with each other and two.

I-VII-ii : Where there are two points, which are internally identical and yet externally two, they are descriptively seen as if each externally determines the other so as to be internally identical. This is the meaning of ⟹, which is, by the symmetry, ⟸. The meaning of the relation of their mutual-determination is to describe their internal identity in terms of its external manifestation (i.e. to tell what it will be like if what is internally identical transforms itself into any externally divisible entity). If what is described as $e' \overset{e}{\longleftarrow} e''$, which is internally identical by →← or by ←→, is externally divisible into two points, then such two points will appear as if each externally determines (i.e. internally transforms itself into) the other, so as to be internally identical (i.e. to be externally two). What is described as $e' \overset{e}{\longleftarrow} e''$ is necessarily also described to be divisible (i.e. as two points, which self-relate to each other). This is so because it is self-imposed with the descriptive necessity to describe the external difference of the internally identical →← and ←→.

II : If $e' \overset{e}{\longleftarrow} e''$ is described to be identical by →← or by ←→, then by the internal relation between →← and ←→ what is →← could have been ←→, and vice versa. This is so because given →, it, in itself, implies ← and therefore forms →←, and consequently because given →, it, in itself, may be implied by ← and therefore could have been ←→. The same applies to the case that ← is given first. Therefore, what is presented as ⇄ ⇆ could have been presented as ⇆ ⇄. This, however, makes no difference and results in the exactly same outcome. This is so because the meaning of ⇄ ⇆ lies in the external relation between →← and ←→, which are mutually determinative. Consequently, ⇆ ⇄ : : ⟾ : · ⟸ · : ⟸ : which is also ⟹.

III : The relation between I and II describes that → and ← holds symmetrically (i.e. descriptively non-specifically) between same two points. Therefore, ⟸ is ⟹, and

 is  . The 1-dimension is anything which is demonstrated between any two points by means of their innate necessity to relate to each other. Any two points are necessarily described to appear as if each externally determines the other in such a way as to be internally identical. Consequently the 1-dimension is demonstrated to hold between any two points which are identical with each other and therefore relate to each other mutually and unilaterally. The 1-dimension is a set of two unilateral self-relations.

IV : This demonstrative schema is necessary, and not accidental. There is nothing which is borrowed from nowhere, including this very demonstrative schema itself. This demonstrative schema follows solely by the innate necessity of the description of the self-identity of $e' \overset{e}{\longleftrightarrow} e''$ and therefore contains no contingencies.

1.3.1. The 1-dimension therefore has the following properties :

I : It holds if and only if two points are given. Two points are anything such that can be described to be internally identical and externally different.

II : It holds between such two points and therefore as a relation between them.

III : It consists in and of two and only two schematic directions, which are a set of two unilateral self-relations holding between two identical points. This set is formed because such two relations holds between same two identical points.

1.3.1.1. It can be summarized that the above properties are based upon the following descriptive necessities due to the initial condition (i.e. the describability).

(i) By →← or by ←→ $e' \overset{e}{\longleftrightarrow} e''$ remains identical.

(ii) Given $e' \overset{e}{\longleftrightarrow} e''$ by itself in accordance with its own self-imposed necessity of describing itself, both →← and ←→ hold in the existence of $e' \overset{e}{\longleftrightarrow} e''$. $e' \overset{e}{\longleftrightarrow} e''$ is given non-specifically by either of →← and ←→, but not descriptively simultaneously by both of →← and ←→. This is so because no relations can be described in and between such descriptively simultaneous $e' \overset{e}{\longleftrightarrow} e''$, and therefore because it would contradict the initial condition.

(iii) $e' \overset{e}{\longleftrightarrow} e''$ comes into existence non-specifically, necessarily by either of →← and ←→. This means that if both →← and ←→ hold in the existence of $e' \overset{e}{\longleftrightarrow} e''$, then in this existence →← and ←→ necessarily differentiate each from the other.

(iv) If →← and ←→ are to be differentiatively described in a same existence of $e' \overset{e}{\longleftrightarrow} e''$, then this existence necessarily transforms itself into an entity such that is descriptively divisible. It is descriptively impossible for both →← and ←→ to be described to hold in a same existence and yet to be differentiative from each other. $e' \overset{e}{\longleftrightarrow} e''$ exists necessarily in such a way that it comes into existence by either of →← and ←→, and then that it, in itself, implies the other existence of self. This is the external structure of the existence of $e' \overset{e}{\longleftrightarrow} e''$, based upon the internal structure of the existence of $e' \overset{e}{\longleftrightarrow} e''$ (i.e. the self-identity of $e' \overset{e}{\longleftrightarrow} e''$). This schema that the existence of $e' \overset{e}{\longleftrightarrow} e''$ transforms itself into a divisible entity, is required by a descriptive necessity so that →← and ←→ can describe themselves in terms of and in their relation to their own necessary outcome (i.e. $e' \overset{e}{\longleftrightarrow} e''$).

(v) Given such a schema as necessitated by itself, the above mentioned entity is descriptively required to be divisible into two and only two identical selves, which may be called ‘points’. They are identical because →← and ←→ are internally identical and therefore give rise to a same $e' \overset{e}{\longleftrightarrow} e''$. They are two because →← and ←→ hold as

self-relations and are therefore binomial.

(vi) Not both →← and ←→ can hold between same two points descriptively simultaneously. Consequently, there must be two of the above mentioned schema so that there can be two sets of same two points. If the above mentioned schema is required to be two by a descriptive necessity, then such two schemata necessarily demonstrate themselves to be identical with each other ; for the identity between such two schemata is the meaning of the descriptive necessity which requires them to be two.

(vii) Given such two schemata, they give rise to two sets of same two points. These two sets can only be demonstratively seen to be identical with each other. That is, they are described to be identical with each other in terms of a third party (i.e. this very demonstration itself). However, unlike their two schemata there is no third party in terms of which the two points can be described to be identical with each other ; for the two points are internally identical with each other in terms of the existence of $e' \overset{e}{\longleftrightarrow} e''$, but the sole meaning of their existence is to externally describe this internal identity by themselves (i.e. only for this reason the existence of $e' \overset{e}{\longleftrightarrow} e''$ transforms itself into two points). Consequently, the two points are describable to be identical with each other only from the descriptive standpoint of each point (i.e. in terms of each point). This means that such two points appear as if each 'determines' the other so as to descriptively identify it with itself. This external appearance of such two points forms two schematic directions.

(viii) There are two and only two schematic directions. They are internally identical with each other and externally different from each other. This description is the demonstration of the 1-dimension. The descriptive differentiation between the internally identical →← and ←→ forms the 1-dimension.

1.3.2. From the properties of the 1-dimension it necessarily follows that :

I : A point has no size. This is so because the sole and whole meaning of each point lies in its relation to the other.

II : Between two points there is no distance. This is so because the relation between them is only the external appearance of what is internally identical. This distanceless space between two points is the 1-dimensional space. Therefore, the distance between two points can be described to be neither finite nor infinite.

III : The 1-dimension has the length of two points. This is the most basic unit of length and size and underlies the basis of any measurements. Two points are necessarily bound together by their relation and form the most basic unit of measurement. Such as finiteness and infinity are generated by the 1-dimension.

1.3.2.1. The 1-dimension cannot be cut. This is so because where it is cut there are no entities, no measurable quantities and no directions. Consequently, the notion of a unit is originated in the 1-dimension.

1.3.3. Given the schema of deriving points out of the existence of $e' \overset{e}{\longleftrightarrow} e''$ by the describability, and therefore given two of it, the 1-dimension in itself is, by demonstration, seen as anything which consists in and of two schematic directions, → and ←. Such 1-dimension in itself is the 1-dimension.

1.3.3.1. The schema which derives points is descriptively necessary for the1-dimension in itself to describe itself so as not to leave anything (i.e. itself) undescribed. The schematically presented 1-dimension in itself (i.e. the 1-dimension) is therefore self-descriptive. The internal structure of the 1-dimension in itself is embodied in that schema and then manifests itself as the 1-dimension.

2. 2-Dimension : The 1-dimension immediately results in the conditionalization of the 2-dimension

in order to complete its own describability. Another dimension simultaneously follows because given the schema of deriving points, points are derivable, and therefore this schema is valid, if and only if there is a space in which points can be derived at the precise descriptive moment when they are derived. If it is descriptively necessary that the 1-dimension holds between two points, then it is also descriptively necessary that there is a space into which those two points are given. This is so because it is descriptively simultaneous that two points are given, and that the 1-dimension holds between them. This also means that the 1-dimension and this new dimension are descriptively simultaneous. This new dimension is necessarily underlain in the schema of deriving points and therefore by the necessity of demonstration. The self-spatialization of the existence of $e' \overset{e}{\rightleftarrows} e''$ therefore conditionalizes two forms of space. One is between two points, the other is between any possible two points. Two points are given by the necessity that two identical, independent schemata identify themselves with each other in terms of the self-imposed necessity of this very demonstration. The 2-dimension stands for this necessity, and whenever there are two points, the 1-dimension necessarily holds between them. Consequently, the space between any possible two points is identical with every possible location of points such that can be held together by the 1-dimension. The 2-dimension is what makes it possible for the 1-dimension to exist and is therefore the descriptive space of the 1-dimension. The 2-dimension consists in and of points such that are 1-dimensionally binding. The 2-dimension is the totality of such points. The space into which two points are given is identical with the descriptive necessity by which two points are given. Two points are given if and only if they can be given. Those which are given and those which can be given differ from each other and are yet descriptively simultaneous. Nothing is given unless it is known to itself that it can be given, and vice versa. The 1-dimension holds between two points which are given , while the 2-dimension holds between two points which can be given. The 2-dimension is therefore the space of points such that are 1-dimensionally binding. This also means that there can be no such as the 2-dimension in itself ; for the 2-dimension is necessarily descriptively characterized in terms of the 1-dimension. Therefore, the internal structure of the 2-dimension is the 1-dimension. The 2-dimension is described as the space of points which are characterizable in terms of the 1-dimension. The 1-dimension is the space of any two points and is the descriptive space of the 1-dimension in itself.

2.1. If the 2-dimension is the descriptive space of the 1-dimension, then the description of a single 1-dimension determines the 2-dimension. That is, the describability of the 1-dimension determines the existence of the 2-dimension. The 1-dimension is symmetrical to itself. This means that a single 1-dimension is describable twofold. This twofold description of a same 1-dimension characterizes the 2-dimension. This is so because the 2-dimension is any space such that the 1-dimension can exist in it, and therefore because the external structure of the 1-dimension is the internal structure of the 2-dimension. The 1-dimension is describable externally twofold, $\rightleftarrows$ and $\leftrightarrows$. This externally twofold 1-dimension holds between same two points and is therefore internally identical. The relation which holds in and between what is internally identical and externally twofold is $\{\overleftarrow{\rightarrow}\mathrm{v}\overrightarrow{\leftarrow}, \overleftarrow{\rightarrow}\Lambda\overrightarrow{\leftarrow}\}$. This is to say that given what is internally identical and externally twofold, v and Λ hold between them as identical relations and therefore schematically confirm their identity. v and Λ hold between $\rightleftarrows$ and $\leftrightarrows$ as identical relations. This also means that $\rightleftarrows$ and $\leftrightarrows$ are both necessarily under the schema of logic.

2.1.1. By the describability the 1-dimension need to be described only once. This means that there can be one and only one 2-dimension. This 2-dimension is the descriptive space of the 1-dimension and is therefore necessarily such that can descriptively differentiate $\overleftarrow{\rightarrow}\mathrm{v}\overrightarrow{\leftarrow}$ and $\overleftarrow{\rightarrow}\Lambda\overrightarrow{\leftarrow}$ on the understanding of their identity. $\overleftarrow{\rightarrow}\mathrm{v}\overrightarrow{\leftarrow}$ and $\overleftarrow{\rightarrow}\Lambda\overrightarrow{\leftarrow}$ are 1-dimensionally identical and 2-dimensionally differentiative. This is so because they are the external structure of what is symmetrical to itself. To the 1-dimension the 1-dimension is $\rightleftarrows$ and/or $\leftrightarrows$; for each of $\rightleftarrows$ and $\leftrightarrows$ is symmetrical to itself and therefore, in itself, implies the other. This amounts to say that each of $\rightleftarrows$ and $\leftrightarrows$ is self-identical with the other. To the 2-dimension the 1-dimension describes itself as the relation which holds between any possible two points and therefore manifests every possible relation which holds in such an itself ; for the relation between possible two points and two

given points is such that the former can describe the relation which holds in and between what holds in the latter. Their relation is the same as that between the ontologico-notationality and the epistemologicality. The former is, so to speak, the 'idea' of the latter. Without the former the latter cannot be given, without the latter the former nullifies itself. Therefore, every possible relation which holds in the latter is already in the former. That is, every possible relation which holds in what is symmetrical to itself, descriptively presents itself in the 2-dimension. This means that the relations which hold in the identity between $\rightleftarrows$ and $\leftrightarrows$ exist in the 2-dimension.

2.1.1.1. Two points can be given if and only if it is possible for them to be given. Two points are possible to be given if and only if there is a space of points, which is every possible location of points such that are 1-dimensionally binding. The schema of logic provides such locations which descriptively accommodate possible points ; for the relations between possible points can only be found in the schema of logic. That is, the internally identical and externally differetiative relation of relations between two given points can only be described in terms of the logical relation between two identical variable-notions. Therefore, the 2-dimension can be said to be the epistemological description of the ontologico-notational conditionalization of FX. It is the epistemological presentation of the meaning of v and ∧ because two identical variable-notions which are operated by v and ∧ are epistemologically evaluated.

2.1.1.1.1. There descriptively exists one and only one 2-dimension. This 2-dimension, however, descriptively appears as if it has two types of space. This is so because the relation between $\rightleftarrows v \rightleftarrows$ and $\rightleftarrows \wedge \rightleftarrows$ is transcendental and stands for the descriptive incommensurability between them. A logical relation holds between v and ∧ if and only if v and ∧ operate same two different variable-notions. This means that there is descriptively no difference of meaning between v and ∧ when they operate same two identical variable-notions. v and ∧ yet remains differetiative from each other even when they operate same two identical variable-notions. This is so because the existence of same two identical variable-notions necessarily depends upon the logical structure which is originated by the necessity for same two different variable-notions , due to the meaning of the operator →. v and ∧ are therefore descriptively incommensurable, differetiative and yet identical when they operate same two identical variable-notions. $\rightleftarrows$ and $\leftrightarrows$ are identical in meaning and therefore form an identical value of an identical variable-notion. Consequently, $\rightleftarrows v \rightleftarrows$ and $\rightleftarrows \wedge \rightleftarrows$ are descriptively incommensurable, differetiative and yet identical. If the 2-dimension has two types of space such that are characterizable in terms of $\rightleftarrows v \rightleftarrows$ and $\rightleftarrows \wedge \rightleftarrows$, then it appears as if there are two types of 1-dimension in the 2-dimension, although these two types of 1-dimension are 1-dimensionally identical. That is, the two types of 2-dimension are descriptively incommensurable to each other and therefore must have the 1-dimension in each of them. This makes the 1-dimension appears as if it 2-dimensionally has two types. These types are due to a descriptive necessity. Therefore, they are related to each other only transcendentally in the sense that their relation of mutual-incommensurability can only be demonstratively seen.

2.1.1.1.1.1. Anything that is identical with itself is self-relationally symmetrical, and vice versa. $\rightleftarrows$ and $\leftrightarrows$ are the 1-dimensional description of what is identical with itself. Logic is the only schema which descriptively confirms it and is also the most fundamental schema of description. The meaningful existence of same two identical variable-notions is logically dependent upon the structure which is constructed by the necessity for same two different variable-notions. This relation of unilateral dependence between the two sets of variable-notions is due to the descriptive necessity for the meaningful existence of the operator →. That is, whatever that is meaningless can be known to be meaningless if and only if it can be described to be meaningless and is therefore necessarily preceded by something which is meaningfully describable on its own. This is identical with the meaning of the initial condition and can only be demonstrated. Consequently, no relations can be described between $\rightleftarrows v \rightleftarrows$ and

$\overleftrightarrows\Lambda\overrightarrow{\leftarrow}$ on their own account. A transcendental relation stands for a relation such that is descriptively incommensurable on its own.

2.2. $\overleftrightarrows v\overrightarrow{\leftarrow}$ and $\overleftrightarrows\Lambda\overrightarrow{\leftarrow}$ are transcendentally related and are therefore descriptively incommensurable to each other if they are on their own. $\overleftrightarrows v\overrightarrow{\leftarrow}$ and $\overleftrightarrows\Lambda\overrightarrow{\leftarrow}$, however, can be described to be differentiative from, and identical with, each other. This is so because there logically cannot be same two identical variable-notions unless there are same two different variable-notions. The meaningless operator $\rightarrow$ cannot be described to be meaningless unless it is based upon the meaningful operator $\rightarrow$. By this descriptive necessity v and Λ have their own meaning even when they operate same two variable-notions. The transcendentally related $\overleftrightarrows v\overrightarrow{\leftarrow}$ and $\overleftrightarrows\Lambda\overrightarrow{\leftarrow}$ can be described to be differentiative from, and identical with, each other because of this descriptive necessity that v and Λ have their own meaning. That is, the transcendence between $\overleftrightarrows v\overrightarrow{\leftarrow}$ and $\overleftrightarrows\Lambda\overrightarrow{\leftarrow}$ is demonstrated by means of the descriptive necessity of logical operators' retaining their own meaning regardless of their contexts of use. Therefore, the space of possible points can be descriptively characterized in terms of the meaning of v and Λ.

2.2.1. The meaning of logical operators does not change whether they are applied or not. This is so because the schema of logic is more fundamental than that of geometry. The schema of geometry is conditionalized from that of logic. The schema of logic is demonstrated to underlie every other schema.

2.2.2. The 2-dimension is descriptively required by the 1-dimension in itself and is therefore in parallel with the 1-dimension, so that the 1-dimension can come into existence. Therefore, the only property of the 2-dimension is the existence of the 1-dimension. The 2-dimension is the space of possible points such that are necessarily 1-dimensionally binding, and therefore has no properties of its own. Apart from the existence of the 1-dimension the properties of the 2-dimension are identical with those of the 1-dimension.

2.2.2.1. If the 2-dimension is the space of possible points such that are necessarily 1-dimensionally binding, then it appears as if consisting of points which can only be described in terms of the 1-dimension. Therefore, given the descriptive necessity for points and therefore also for the 1-dimension, the 2-dimension appears as if consisting of points and 1-dimensions. A 1-dimension holds between any two points. This means that the 2-dimension appears as if consisting of anything that can be constructed by points and 1-dimensions. Points and 1-dimensions exist in the 2-dimension without being descriptively distorted ; for the 2-dimension is simply the existence of the 1-dimension and therefore has no properties of its own. The 1-dimension exists in accordance with its own descriptive necessity.

2.2.2.1.1. The 1-dimension is 2-dimensionally made plural. This is so because the 1-dimension 2-dimensionally holds between any two of every possible point and then descriptively determines the 2-dimension by characterizing it in terms of $\overleftrightarrows v\overrightarrow{\leftarrow}$ or $\overleftrightarrows\Lambda\overrightarrow{\leftarrow}$. This means that a single 1-dimension can determines the 2-dimension and therefore gives rise to a single 2-dimension. The meaning of the 2-dimension is the existence of the 1-dimension. Consequently, given a single determinant 1-dimension, and therefore also given a single 2-dimension, no more 2-dimensions are descriptively required. Such a single determinant 1-dimension is the 2-dimensional demonstration of the existence of the 1-dimension and therefore holds not between two possible points but between two points which can be described to be given by determining the 2-dimension. Once the 2-dimension is given by this determinant 1-dimension, every other 1-dimension exists in this 2-dimension by complying with such a determinant 1-dimension. This is so because any one of possible 1-dimensions could descriptively have been this determinant 1-dimension. This plurality of points and 1-dimensions makes it possible to form every possible 1-dimensional combination of points within restrictions imposed by the 1-dimensional characterization of the 2-dimension. This 2-dimensional plurality of points and 1-dimensions descriptively presents every possible 2-dimensional figure ; for every possible point is 1-dimensionally related to one another.

2.2.2.2. Once the 2-dimension is determined and therefore given, points and 1-dimensions appear in it as if they are on their own ; for the meaning of the 2-dimension is demonstrated by the existence of a determinant 1-dimension. This determinant 1-dimension 2-dimensionally embodies its own descriptive necessity. Consequently, this 2-dimension, in itself, embodies the descriptive necessity for every point and 1-dimension. This means that anything that exists in this 2-dimension necessarily appears in it as if it is free and independent. Anything that exists in the 2-dimension innately underlies the meaning of the 2-dimension and consequently what determines such a 2-dimension (i.e. its own meaning). That is, whatever that exists in the 2-dimension necessarily underlies its own descriptive necessity and therefore appears as if it is on its own.

2.2.2.2.1. If every point appears in the 2-dimension necessarily as if it is on its own, then the 1-dimensional relation which holds between any two of them appears as if it is a property of the 2-dimension. This is the notion of a 2-dimensional distance, which may be called a 2-dimensional 1-dimension. The 1-dimension has a unit of length. Therefore, if there is a minimum 2-dimensional 1-dimension such that is no longer divisible, then it has a unit of length which is the 2-dimensionally transformed form of the 1-dimensional unit of length. This is the minimum 2-dimensional unit. That is, being necessarily 1-dimensionally binding, every point in the 2-dimension has a 2-dimensional distance to every other point. Every 2-dimensional distance is constructive from this minimum 2-dimensional unit. A geometrical function is a combination of such units or of such a unit. A curved ‘line’ - but not a curved space - is a functional combination of such units, without which no differentiation is possible. Once numbers are generated, units are descriptively subject to the schema of numbers and therefore to numerical representations. This 2-dimensionally transformed 1-dimension unit of length is the most fundamental unit of measurement not only in the 2-dimension but also in every other higher dimension.

2.2.3. The propertiless 2-dimension has characteristics which are necessarily due to the difference in meaning between v and ∧. These characteristics generate two types of space in the 2-dimension.

2.2.3.1. Characteristics I : $\overleftarrow{\underrightarrow{\ }}v\overrightarrow{\underleftarrow{\ }}$: v is a logical operator and holds between two variable-notions. Consequently, it is descriptively necessary for $\overleftarrow{\underrightarrow{\ }}$ and $\overrightarrow{\underleftarrow{\ }}$ to be values of variable-notions. Logical operators are the ontologico-notational representation of the modes of FX, while variable-notions are the ontologico-notational representation of FX. This means that anything can be a value of variable-notions if and only if it satisfies FX. e (i.e. the epistemological description of FX) is necessarily such a anything. Therefore, anything that is conditionalized out of this e can also be a value of variable-notions. This means that only those which comply with their own descriptive necessity can be such values. Those which comply with their own descriptive necessity descriptively demarcate themselves from one another so as to be descriptively intelligible, and come to create dimensions. Therefore, only those which are discernible from one another or descriptively appear as if being discernible from one another (i.e. points and 1-dimensions in the 2-dimension), can be values of variable-notions. That is, descriptive necessities are necessarily dimensional, schematic and clearly demarcatable from one another. Consequently, the schema of logic can only be applied to one schema at a time unless it is applied to every schema at a time ; for this mutual-demarcation among descriptive necessities is also itself a descriptive necessity. When it is applied to a schema whether it is this very demonstration itself or some particular schema within this demonstration, only entities which are demarcatable or as if being demarcatable can be values of variable-notions and therefore comply with the initial condition. $\overleftarrow{\underrightarrow{\ }}$ and $\overrightarrow{\underleftarrow{\ }}$ belong internally to the schema of the 1-dimension and externally to the schema of the 2-dimension. $\overleftarrow{\underrightarrow{\ }}$ and $\overrightarrow{\underleftarrow{\ }}$ are together 1-dimensionally demarcated from anything else and are described to be identical with each other. They 2-dimensionally appear as if being demarcated from each other ; for the 2-dimension is the space of possible points and is what makes it possible for the internally identical $\overleftarrow{\underrightarrow{\ }}$ and $\overrightarrow{\underleftarrow{\ }}$ to be given. Neither of $\overleftarrow{\underrightarrow{\ }}$ and $\overrightarrow{\underleftarrow{\ }}$ is 2-dimensionally reducible into the other. Therefore, both of them

2-dimensionally embody e. $\overleftrightarrows$ and $\overrightarrow{\leftarrow}$ are the only descriptive constituents of the 2-dimension. Consequently, in the application of the schema of logic to the schema of the 2-dimension, only $\overleftrightarrows$ and $\overrightarrow{\leftarrow}$ can be values of variable-notions.

2.2.3.1.1. $\overleftrightarrows$ and $\overrightarrow{\leftarrow}$ are internally identical and are so demonstrated in the schema of the 1-dimension. The schema of the 2-dimension demonstrates their external differentiativeness. The schema of logic is applied to the schema of the 1-dimension in order to bring out this external differentiativeness of what is internally identical with each other. Therefore, the internal identity between $\overleftrightarrows$ and $\overrightarrow{\leftarrow}$ is the meaning of $\overleftrightarrows$ and $\overrightarrow{\leftarrow}$ which are taken as values of variable-notions. This means that $\overleftrightarrows$ and $\overrightarrow{\leftarrow}$ stand for an identical value of an identical variable-notion in this applied schema of logic.

2.2.3.1.2. Values of variable-notions are necessarily descriptively demarcatable from each other, and neither of $\overleftrightarrows$ and $\overrightarrow{\leftarrow}$ is descriptively reducible into the other in the 2-dimension. This means that the disjuncts of $\overleftrightarrows \mathrm{v} \overrightarrow{\leftarrow}$ are identical with each other and are yet differentiated from each other. This is the meaning of $\overleftrightarrows \mathrm{v} \overrightarrow{\leftarrow}$. This meaning of $\overleftrightarrows \mathrm{v} \overrightarrow{\leftarrow}$ can be so described and known if and only if each disjunct of $\overleftrightarrows \mathrm{v} \overrightarrow{\leftarrow}$ is indeed identical with the other and yet irreducible into the other.

2.2.3.1.3. The meaning of v is therefore applied to hold between two values of an identical variable-notion such that are identical with each other and yet irreducible into each other. The meaning of such v is described necessarily in contrast to that of $\wedge$ of $\overleftrightarrows \wedge \overrightarrow{\leftarrow}$, based upon the knowledge that $\overleftrightarrows \mathrm{v} \overrightarrow{\leftarrow}$ and $\overleftrightarrows \wedge \overrightarrow{\leftarrow}$ are operationally identical. It is already demonstrated how v and $\wedge$ are conditionalized and that v and $\wedge$ are the only operators which - applied or not - identically hold between two identical variable-notions and therefore between two identical values of an identical variable-notion.

2.2.3.1.3.1. If v holds between two such values, then it means that its two disjuncts are necessarily such entities that are identical, mutually irreducible and are yet in a same schema. Given only either of such entities, v holds. v therefore holds identically in either way. This means that there is a schema such that can be constructed identically by either of such entities.

2.2.3.1.4. Given either of $\overleftrightarrows$ and $\overrightarrow{\leftarrow}$, the 2-dimension can be constructed identically. This means that the 2-dimension can be constructed by $\overleftrightarrows$ or by $\overrightarrow{\leftarrow}$, and that two such 2-dimensions are identical. Two such 2-dimensions can be described to be identical and therefore can manifest themselves as an identical schema if and only if they appear as if they are themselves a space such that descriptively consists in and of two determinant 1-dimensions which describe themselves to be identical. It is a space in which given two 1-dimensions, they both descriptively merge into one and the same 1-dimension.

2.2.3.1.4.1. Such a space is necessarily described to be ‘curved’ so that two given 1-dimensions (i.e. two determinant 1-dimensions) can be described to be spatially identical. That is, given two 1-dimensions in it, they merge into one and only one 1-dimension which has two and only two schematic directions. This new 1-dimension which is 2-dimensionally formed by two given 1-dimensions, is not a functional combination of units but itself a single unit. This is so because this new 1-dimension is the outcome of two 1-dimensions which are given in order to determine the 2-dimension by means of their inherent relation which is necessarily in contrast to another inherent relation between them. This new 1-dimension therefore two and only two directions and is ‘curved’ in such a way as to be one and only one 1-dimension. The necessity for the existence of such a new 1-dimension characterizes the 2-dimension and generates a type of space of the 2-dimension.

2.2.3.1.5. The 2-dimension therefore has a type which is characterized by $\overleftrightarrows \mathrm{v} \overrightarrow{\leftarrow}$. Such a type forms its own schema because it satisfies its own descriptive necessity. The characteristic of being-‘curved’ is not 1-dimensional but necessarily 2-dimensional. Therefore, not only

two but also any given 1-dimensions merge into one and only one 1-dimension in the above type of 2-dimensional space. Any two given 1-dimensions can be determinant if and only if they demonstratively embody the above characteristic of being-'curved'. Every other given 1-dimension appears as if they are determined by these two determinant 1-dimensions and therefore looks as if being made to curve by this 2-dimensional space. Any given 1-dimensions 'curve' because of their internal structure of $\{\overleftarrow{\Rightarrow}\mathrm{v}\overrightarrow{\leftarrow}, \overleftarrow{\Rightarrow}\Lambda\overrightarrow{\leftarrow}\}$. However, it appears as if the space in which those 1-dimensions are given is itself 'curved'. This is so because 1-dimensions are given in a space necessarily in such a way as to characterize that space by means of their own internal structure. This means that the characteristic of being-'curved' appears as if it is a property of the space in which those 1-dimensions are given, and that this 'as if' is a descriptive necessity. The two determinant 1-dimensions only demonstratively show this property.

2.2.3.1.5.1. If a space can be characterized by two given 1-dimensions' merging into a single 1-dimension and is therefore described to be curved, then anything that can be given in this space is curved and merge into that single 1-dimension. This means that any number of 1-dimensions can be given only to result in a same 2-dimensionally merged 1-dimension with two and only two directions. Therefore, this space is curved in such a way as to be closed and uniform. This is so because if two 1-dimensions are given and merge into a single 1-dimension, and if anything that is given in this space merge into this single 1-dimension, then this single 1-dimension is necessarily such that is in a space and also, by itself, holds a space. Any space which is characterized by a single entity that is in that space and has two and only two directions, is necessarily closed and uniform. It is closed because, otherwise, it cannot be described that it has one and only one entity in it. It is uniform because this one and only one entity is in a space other than itself and has two and only two directions. This space is therefore closed and uniform in terms of what characterizes it and is therefore also finite. It is finite but boundless because its boundary (i.e. that single 1-dimension) is itself a unit. A single entity can be described to exist and to have two and only two directions only in a space that is uniformly closed and boundless if and only if there exists in it one and only one entity such that has two and only two directions. This space and its boundary determine each other. Consequently, the size of this space is identical with that of its boundary.

2.2.3.1.5.2. This type of 2-dimensional space is described as a 'circle' if it is, by a descriptive necessity, put into the other type of 2-dimensional space. It also has the finite but boundless size of a single unit. This unit is, however, descriptively incommensurable with a unit in the other type of 2-dimensional space. This is so because the two types are only transcendentally related to each other and do not share a same descriptive necessity. Consequently, neither of those two types of unit can be the descriptive basis of measurement by which to measure the other. This is the reason why the description of a 'circle' necessarily needs a descriptively incommensurable quantity (i.e. the transcendental number π). The transcendence of π is identical with the descriptive incommensurability between the two types of 2-dimensional space, which are respectively characterized by means of $\overleftarrow{\Rightarrow}\mathrm{v}\overrightarrow{\leftarrow}$ and $\overleftarrow{\Rightarrow}\Lambda\overrightarrow{\leftarrow}$.

2.2.3.1.5.3. In this type of 2-dimensional space every 1-dimension is described as one and only one 1-dimension which constitutes the boundary of this space and has a unit of length. Every 1-dimension consists in and of two and only two and only two points which are necessarily so correlated as to determine two and only two directions. This single 1-dimension, however, appears as if having one and only one point which is, nevertheless, correlated to itself in such a way as to determine two and only two directions of this single 1-dimension. Consequently, in this type of 2-dimensional space two points appear as if merged into a single point from which two directions can be found along this single 1-dimension. That is, from such a single point this single 1-dimension appears as if it is, in itself, directionally twofold, each representing one of its two directions. Such a point is the 'centre' of this 2-dimensional space.

2.2.3.2. Characteristics II : $\overleftrightarrows\Lambda\overrightarrows$: The meaning of Λ is based upon that of v and lies in its schematic confirmation of such existences that are operationally identified by v as being 0-dimensionally identical. That is, by the meaning of Λ two schemata such that can be identically constructed by each of two 0-dimensionally identical existences, can be confirmed to be an identical schema under the same schema of logic or under a same applied schema of logic. Therefore, whatever may be v-operative, they are necessarily also Λ-operative. Any two entities are v-operative if and only if they result in an identical schema. v identifies two such entities in terms of what identically results from them (i.e. the identity in structure between two schemata which are based upon those two entities which are both 0-dimensional). If two entities are both 0-dimensional and therefore result in two identical schemata, then they, ontologico-notationally speaking, self-contain each other. v represents the identity of such entities in terms of what structurally identically results from them. Two identical entities which are so identified by v as what results in two identical schemata, must be schematically so confirmed as an identical schema under the same schema of logic. This is so because two identical schemata which result from two identical entities, can only be identified as an identical schema in terms of the identity in existence between two such entities. What self-contains each other necessarily belongs to an identical schema. Therefore, two identical schemata which result from them are necessarily an identical schema. Whatever may result from two entities which belong to an identical schema, they are necessarily within this same identical schema. Consequently, Λ holds only between two schemata such that are so identified by v as what results from two 0-dimensionally identical entities, and it identifies them as an identical schema in terms of the identity in existence between those two 0-dimensionally identical entities. That is, Λ represents the identity of two identical schemata in terms of their identical 0-dimensionality. Only two schemata such that are identical with each other can be Λ-operative. $\overleftrightarrows\Lambda\overrightarrows$ says that there are two schemata which are identical, while $\overleftrightarrows v\overrightarrows$ says that there are two entities which can be described to be identical and are therefore necessarily under a same schema. Their only difference is that schemata are necessarily structural and therefore, if they are identical, cannot be described to be existent independently from each other, while entities are descriptively existential and therefore, even if they are identical, can be described to be identically existent independently from each other. That is, two entities can be described to be identical with each other and yet independent from each other if and only if they are both 0-dimensional and therefore self-contain each other. However, two schemata cannot be so described because a schema is not an existence but the description of an existence. There cannot be any describable relations between two identical descriptions without contradicting the initial condition. If two schemata are identical, then they can only be an identical schema, and not two identical schemata. $\overleftrightarrows v\overrightarrows$ immediately results in $\overleftrightarrows\Lambda\overrightarrows$ because two entities which give rise to two identical schemata, have an innate necessity to confirm that such two identical schemata are necessarily an identical schema. Two identical schemata have a descriptive necessity to be an identical schema in order to comply with the initial condition. This descriptive necessity is therefore identical with the descriptive necessity by which the schema of logic is conditionalized. This means that the resultant identical schema is, applied or not, 0-dimensionally identical with what ontologico-notationally describes itself (i.e. the schema of logic). $\overleftrightarrows\Lambda\overrightarrows$ is therefore described to stand for two identical schemata's being necessarily an identical schema and is also described to be under the same schema of logic that governs $\overleftrightarrows v\overrightarrows$. The logical space encompasses $\overleftrightarrows$ and $\overrightarrows$ as their descriptive necessity and is also closed. This is so because the logical space is the descriptive necessity for and of anything, and because anything can be described to self-contain itself. $\overleftrightarrows v\overrightarrows$ and $\overleftrightarrows\Lambda\overrightarrows$ are together a description of such a anything and are under a same descriptive necessity. Whatever may be v-operative, they are also Λ-operative. However, neither of v and Λ is descriptively reducible into the other because they underlie each other by being underlain by their common descriptive necessity.

2.2.3.2.1. The epistemological description of the meaning of v is that there exist two entities such that are identical and therefore result in two identical schemata. In contrast to this, Λ epistemologically says that there exist two schemata such that are identical and are

therefore an identical schema. The application of the schema of logic necessarily generates this difference between entities and schemata in accordance with its internal structure. Therefore, only within this applied schema of logic $\overleftarrow{\rightleftarrows}$ and $\overrightarrow{\rightleftarrows}$ are taken, on one hand, as entities, and on the other, as schemata. A 'value' is an individual presentation of what is collectively called 'variable-notions'. Anything can be a 'variable-notion' if and only if it is describable, while anything can be a 'value' if and only if it is described (i.e. descriptively specified). Consequently, anything can be said to be a 'value' if and only if it can also said that it can, by itself, construct the logical space. $\overleftarrow{\rightleftarrows}$ and $\overrightarrow{\rightleftarrows}$ can be 'values' only because they already underlie 'variable-notions'. The schema of logic can be applied to them because they are describable as 'variable-notions'. Therefore, in the logical space $\overleftarrow{\rightleftarrows}$ and $\overrightarrow{\rightleftarrows}$ act as if they are 'variable-notions'.

2.2.3.2.2. When $\overleftarrow{\rightleftarrows}$ and $\overrightarrow{\rightleftarrows}$ are $\wedge$-operated, they are therefore two identical schemata which are to be identified as an identical schema. $\overleftarrow{\rightleftarrows}\wedge\overrightarrow{\rightleftarrows}$ stands for a space in which two identical schemata are, by complying with the initial condition, so taken for granted as to be an identical schema. In contrast to this, $\overleftarrow{\rightleftarrows}\vee\overrightarrow{\rightleftarrows}$ is a space in which two given entities descriptively merge into an identical entity and therefore, by doing so, give rise to two identical schemata, which immediately result in $\overleftarrow{\rightleftarrows}\wedge\overrightarrow{\rightleftarrows}$. Therefore, space and its contents determine each other in $\overleftarrow{\rightleftarrows}\vee\overrightarrow{\rightleftarrows}$, while they coincide with each other in $\overleftarrow{\rightleftarrows}\wedge\overrightarrow{\rightleftarrows}$. That is, the space of $\overleftarrow{\rightleftarrows}\vee\overrightarrow{\rightleftarrows}$ (Type I space) is a space which commands its entities toward its descriptive necessity so as to be compatible with what it allows itself to take as its entities. This also means that it appears as if entities determine their space ; for there cannot be any entities outside a space if this space is the descriptive space of those entities, and this includes a case such that an entity is its own space. The space of $\overleftarrow{\rightleftarrows}\wedge\overrightarrow{\rightleftarrows}$ (Type II space) is the space of spaces which are commanded by their entities toward their descriptive necessity so as to be compatible with what they are allowed to take as their entities. This necessarily makes those spaces a single identical space. This is the reason why the entities of Type II space can only be schemata.

2.2.3.2.2.1. A space can take in only what it can take in. Therefore, a space either determines what it can take in or is determined by what it takes in. By the initial condition anything which is describable to exist, exists, and what is describable is so known to itself by itself. This means that anything exists so as to be described or is described so as to exist. A space is determined by what it contains, and what is containable is determined by a space. Consequently, every space is identical with each other, and therefore results in an identical space.

2.2.3.2.3. $\overleftarrow{\rightleftarrows}$ and $\overrightarrow{\rightleftarrows}$, on one hand, determine Type I space if and only if they are taken as identical entities, on the other, determine Type II space if and only if they are taken as identical schemata. If they are taken as identical entities, then they are necessarily under a same schema which takes in both entities together so that they can be described to be identical. If they are taken as identical schemata, then they necessarily describe themselves as an identical schema. This means that they are not under an identical schema but themselves an identical schema. Therefore, $\overleftarrow{\rightleftarrows}\wedge\overrightarrow{\rightleftarrows}$ is the form of coexistence and stands for the coexistence of two 1-dimensions.

2.2.3.2.3.1. If it is descriptively necessary that two identical schemata are an identical schema, then they necessarily imply each other as an identical schema. This is so because the necessity for two identical schemata to be an identical schema, is inherent to each of those two identical schemata and is therefore not the same as an identification by a third party. This epistemologically means that there must exist two schemata which are identical, and that they determine their identical space by implying each other. Consequently, there necessarily exist two schemata of the 1-dimension. Type II space is determined by two existences such that are identical and therefore so imply each other. Type II space holds two and only two 1-dimensions which are only 1-dimensionally identical.

2.2.3.2.4. The 1-dimension is anything that consists in and of two and only two directions such that are determined by two and only two points which are so correlated as to descriptively represent each other. This is the 1-dimension as a schema. The existence of two of such a schema can be so correlated as to be an identical existence if and only if they 'intersect' in the sense that ;

(i) two sets of two and only two directions coexist,

(ii) if such a coexistence is describable, then those which coexist cannot be independent from each other,

(iii) whatever that is not independent from each other, share a same space,

(iv) given any two 1-dimensions in such a space, they cannot hold exclusively to each other.

2.2.3.2.5. Type II is therefore a space which is determined by two 1-dimensions' intersecting each other. That is, being unable to hold exclusively to each other two 1-dimensions necessarily generate a space between them. This 'between' stands for the characteristic of Type II space. Type II space is therefore, like Type I space, internally determinant and is therefore a schema of its own. Two 1-dimensions are given by intersecting each other and so determine a space between them. This space therefore necessarily has a 'centre'. However, unlike the centre of Type I space this 'centre' is not identifiable with the 2-dimensional manifestation of schematic points, which determine two and only two directions and, in the case of Type I space, merge into a single point (i.e. a 2-dimensional point). This is so because Type II space necessarily consists in and of two intersecting 1-dimensions. This means that no schematic points can be descriptively seen within this space. Type II space is described by and between them.

2.2.3.2.5.1. There is no such as 'the' centre of Type II space. This is so because Type II space is determined by two 1-dimensions which necessarily intersect each other by being internally so determined as not to be able to hold exclusively to each other. Consequently, the necessity for this intersection is 1-dimensional. This 2-dimensional space is the description of such 1-dimensional necessity, which 1-dimensionally remains indescribable. The existence of two intersecting 1-dimensions is a 1-dimensional necessity and is not 2-dimensional. This necessity conditionalizes itself as Type II space. This means that those two intersecting 1-dimensions generate Type II space and only simultaneously come to possess 2-dimensional directions. That is, Type II space comes into existence simultaneously with those two intersecting 1-dimensions' acquiring 2-dimensional directions. Therefore, if a centre is where two given 1-dimensions intersect each other, then it can be anything from where four 2-dimensional directions extend from one another, making two sets of two symmetrical directions. Type II space can be determined by any two given intersecting 1-dimensions. This is so because 1-dimensions themselves have no 2-dimensional directions and are therefore unable to 2-dimensionally standardize themselves. Two given 1-dimensions come to possess 2-dimensional directions simultaneously as they intersect each other. Two given 1-dimensions' intersecting each other is simultaneous with Type II space's coming into existence and therefore with its giving those two 1-dimensions 2-dimensional directions. That is, two intersecting 1-dimensions' giving rise to Type II space is simultaneous with their getting 2-dimensionally identified in that space. This means that Type II space can be 2-dimensionally described to be determined by any two 1-dimensions such that intersect each other and are therefore uniquely identifiable in this Type II space. Consequently, if a centre is where any two given 1-dimensions intersect each other, then every point where two1-dimensions are 2-dimensionally uniquely identifiable to intersect each other, is a centre. Such a point is a 2-dimensional point.

2.2.3.2.5.1.1. It is descriptively necessary that Type II space is infinite and uniform for the following reasons :

(i) Type II space is a space which can be determined by any two given intersecting 1-dimensions.

(ii) 1-dimensions themselves do not have any directions other than 1-dimensional directions (i.e. what internally holds in every 1-dimension).

(iii) Two given 1-dimensions intersect each other and simultaneously generate a space between them. By this simultaneity every other 1-dimension can be described to be given into this space if and only if they intersect at least one of those two given intersecting 1-dimensions. This necessarily allows Type II space to have parallel 2-dimensional directions.

(iv) In determining Type II space no particular two 1-dimensions can be descriptively discernible from any other two 1-dimensions and therefore can be taken as the determinant of Type II space ; for 1-dimensions themselves do not have any 2-dimensional directions. That is, 1-dimensions which generate Type II space acquire 2-dimensional directions only simultaneously as they generate this space, and every1-dimension is descriptively simultaneous.

(v) Given Type II space by any two intersecting 1-dimensions, any points where at least two 1-dimensions are uniquely describable to intersect each other, can be a centre. Every centre is descriptively identical with one another because any two intersecting 1-dimensions are 1-dimensionally identical and 2-dimensionally simultaneous. Consequently, from every centre every possible 2-dimensional direction identically extends.

(vi) Type II space therefore consists in and of such centres from every one of which every possible 2-dimensional direction identically extends. Such a space is necessarily infinite. This is so because, due to the 1-dimensional identity and 2-dimensional simultaneity of 1-dimensions, once given Type II space by two intersecting 1-dimensions, this space 2-dimensionally allows anything as a 2-dimensional direction if and only if it is describable to intersect at least one of those two given intersecting 1-dimensions. This complies with the initial condition because there can only be one and only one independent two intersecting 1-dimensions and therefore one and only one $\overleftarrow{\rightarrow}\Lambda\overrightarrow{\leftarrow}$. That is, in Type II space there can be not a single 2-dimensional direction without intersecting at least one other 2-dimensional direction. The existence of more than one Type II space contradicts the initial condition. This ensures the 2-dimensionality of any 1-dimensions in Type II space.

(vii) Every 2-dimensional direction intersects at least one other 2-dimensional direction. This allows parallel 2-dimensional directions to any given 2-dimensional directions. This parallelness is therefore compatible with the characteristic of Type II space. Parallel 2-dimensional directions can be accommodated within a same space if and only if this space is infinite. This is so because to any parallel directions there is always a parallel direction. 2-dimensional directions therefore extend infinitely.

(viii) Type II space can be determined by any two 1-dimensions, which are, in themselves, 2-dimensionally not differentiative from one another. It is therefore incompatible for such a space to be able to discriminate any particular 1-dimensions from others. This means Type II space is uniformly distributed with centres, and that every centre is identical with every other centre. Type II space is necessarily such that any two 1-dimensions can be uniquely described to intersect each other if and only if at least one of them is unique. This is so because any 1-dimensions can be given into Type II space if and only if they can be described to intersect at least one of two given intersecting 1-dimensions, and because they cannot be descriptively discriminated from these two given intersecting 1-dimensions. Consequently, two 1-dimensions can be uniquely described to intersect each other

wherever there is not yet an intersection. This makes Type II space uniform.

2.2.3.2.5.1.2. A space is infinite if and only if it is dynamic. An infinite space is a space which expands with no limits so that any points where two 1-dimensions intersect each other, can be a centre. From every centre every 2-dimensional direction identically extends. If any points can be a centre, then it is necessary that more 2-dimensional directions, which necessarily include parallel ones, intersect at least one other 2-dimensional direction. This gives rise to more centres. Consequently, an infinite space expands in order to comply with its own descriptive necessity and is therefore necessarily dynamic. It consists of an infinite number of centres. These centres are not countable because they are dynamic.

2.2.3.2.5.1.2.1. If Type II space stopped expanding, then it would internally generate a fictitious space ; for Type II space would then deprive itself of its necessity for parallel 2-dimensional directions. That is, every 2-dimensional direction would become unique. This means they would intersect one another at a same point and therefore would constitute a space which is necessarily finite, boundless and uniformly curved. This space is finite because two schematic points hold a 1-dimension (i.e. a set of two symmetrically related 2-dimensional directions) between them and therefore have the length of a unit, and consequently because this space does not expand. It is boundless because this unit of length between two schematic points is 1-dimensional and therefore 2-dimensionally indefinite. It is uniformly curved because any two schematic points hold an identical unit of length between them. These amount to say that this space consists of uniquely different 2-dimensional directions which are infinitely dense and extend from one and only one centre. These directions appear as if boundlessly expanding because between any two uniquely different directions there is always at least one uniquely different direction. This expansion is, however, static because the size of that one and only one centre is necessarily static in the sense that it can be determined by two and only two 1-dimensions and so remains no matter how many 1-dimensions may intersect one another at that point. This space therefore remains finite despite of such a descriptive appearance. The only centre of this finite, boundless and uniformly curved space consists in and of either a point or a region of space and has a static size which cannot be measured. The size of this centre cannot be measured because the constituent(s) of this space is the only substance of this space. An immeasurable static size is an infinitesimal quantity if and only if this size consists of a substance which does not form its own space and is therefore in a space. This is so because if there exists one and only one substance in a space, then there is nothing else other than this space itself in order to compare and measure the size of this substance. A space is necessarily either infinite or finite but boundless. This means that the size of such a substance can only be infinitesimal. Type II space and its static version are generated by intersecting 1-dimensions so that those 1-dimensions can accommodate themselves necessarily together. This necessity of 1-dimensions' being unable to hold exclusively to each other manifests itself as Type II space and its static version. Consequently, if a point of intersection is a substance, then this substance cannot itself be its own space and is necessarily in a space. A point of intersection is necessarily quantitative because it occupies a portion of space. A descriptively immeasurable quantity is infinitesimal in size if it is static and is in a space, while it is infinite in size if it is dynamic and is itself a space. The size of centres of Type II space and also of the centre of the fictitious version of Type II space belongs to the former case, and the size of Type II space belongs to the latter case. This latter so holds because Type II space can be described to consists in and of centres. The only difference between Type I space and the fictitious version of Type II space is that while the former has one and only one point of centre, the latter has a central region of space which consists of either one and only one point or a collection of points such that result from every two different 1-dimensions' intersecting each other. If this second one is the case, then points are confined in a region of space which is finite, boundless and uniformly curved. This means that they are confined in such a way that they

become denser and denser toward a centreless centre. This central region is finite because there are no parallel directions. It is boundless because any two different 1-dimensions can intersect each other. It is uniformly curved because every 1-dimension has an identical unit of length. Whether this centre is a point or a collection of points, it has no measurable size. This is so because that collection of points is formed necessarily in such a way that points get denser and denser toward a centreless centre, and therefore that this region of points necessarily appears as if demarcated from its surrounding space and is consequently as if being in a space. That is, a point and a collection of points are, in this context, descriptively identical.

2.2.3.2.5.1.2.2. Type II space has a necessity not to stop expanding. Therefore, this static Type II space is purely fictitious. It is, however, useful in the sense that it can describe the transcendental relation between Type I and II spaces if Type I space also internally generates a fictitious space. This means that even a notational fiction, if it is meaningful, necessarily complies with the initial condition. If it could be assumed that this fictitious space could be somehow given, then it would be a space which coincided with its own central region of space. Therefore, it would be finite and uniformly curved. It would also be bound by schematic points and therefore would be boundless ; for schematic points do not exist within a 2-dimensional space. This fictitious space is, so to speak, Type I space which is seen and described from outside that space.

2.2.3.2.5.1.3. Type II space is the external manifestation of an internal relation between two 1-dimensions and is infinite and dynamic because of this internal relation. It expands with no limits in order to accommodate parallel directions which are necessitated by an infinite number of centres. Type II space holds between two 1-dimensions and simultaneously determines them as 1-dimensions directions. This means that a 1-dimensional unit of length simultaneously transforms itself into a 2-dimensional unit of length, and that this 2-dimensional unit of length is infinity. In the 1-dimension a 1-dimension is a substance of its own and holds in and between two schematic points. However, in this 2-dimensional Type II space its substance is not such 1-dimensions but a relation between any two of such 1-dimensions ; for Type II space exists in order to describe such a relation. Therefore, points of intersection (i.e. centres) are the substance of Type II space and spatially occupy Type II space. 2-dimensional directions (i.e. 1-dimensions in Type II space) are the form of Type II space and do not spatially occupy Type II space. This means that that 2-dimensional unit of length (i.e. infinity) is the length of a pair of symmetrically related 2-dimensional directions if and only if this pair of 2-dimensional directions is made spatially visible by means of points of intersections. Infinity is therefore the form of a collection of infinitesimal quantities such that are descriptively found in a 1-dimension in Type II space.

2.2.3.2.5.1.3.1. The 2-dimension consists of two types of space and therefore of two types of 2-dimensional 1-dimensions. The 1-dimension consists in and of two schematic points. Schematic points are therefore 2-dimensionally described twofold. In Type I space the two schematic points are, by their meaning, identical with the centre (i.e. one and only one 2-dimensional point) of that space and give rise to the closed boundary of that space. In Type II space and its fictitious version there are an infinite number of schematic points, and they form the boundary of those spaces from outside those spaces and give rise to the substance of those spaces. These two types of space are 1-dimensionally one and the same. Their difference is necessarily only 2-dimensional. The boundary of Type I space is internally formed, while that of Type II space is externally formed. This is so because the former is internally schematic, while the latter is externally schematic and is therefore a schema of schemata.

2.2.3.2.6. A 1-dimension is a unit of quantity and, in Type II space, comes to have an infinite length. This unit is also the most basic unit. Consequently, a point of intersection is

descriptively immeasurable. However, a point of intersection is quantitative because it necessarily occupies a portion of space. In Type II space a 1-dimension is a pair of 2-dimensional directions and therefore does not itself occupy any portion of space. This means that a 1-dimension can be described to have an infinite length in Type II space only in terms of points of intersection. A collection of this immeasurable quantity of a point of intersection therefore constitutes infinity, which is the most basic 1-dimensional unit of Type II space. Such a quantity is the most basic 2-dimensional unit and is infinitesimal. It is infinitesimal because it is static, immeasurable and is in a space, which is infinite in size. A 1-dimension can be described to consist of an infinite number of points of intersection, each of which has only an infinitesimal quantity. That is, in Type II space a 1-dimension is necessarily uniformly intersectible by an infinite number of other 1-dimensions. This also means that Type II space itself consists in and of an infinite number of centres.

2.2.3.2.6.1. In the fictitious version of Type II space a 1-dimension has only a finite length and is intersected either at the very centre of space or more and more often toward the centreless centre of space. If the latter is the case, then a given 1-dimension can be described to consists of a finite number of infinitesimal points which become denser and denser toward this centreless centre. Therefore, if those points are described to be uniformly dense, then this given 1-dimension appears as if being curved toward this centreless centre. Or, if a given 1-dimension is intersected by every other 1-dimension at the very centre, then this given 1-dimension can be described to consist of a single infinitesimal point, which coincides with the total quantity of this space.

2.2.3.2.6.2. In Type I space a 2-dimensional point is such that from where two and only two directions can be determined so as to form a 1-dimension. This point, however, does not occupy a portion of space. This is so because a 1-dimension such that can be determined by a single point, neither intersects anything nor coincides with that point. Therefore, in Type I space a 2-dimensional point is a region of space with no quantity. This 2-dimensional point determines two and only two directions in such a way that from any part of this resultant 1-dimension they simultaneously hold. This 2-dimensional 1-dimension which forms the boundary of Type I space therefore necessarily consists of points which are not intersectible by anything. Every point of this 1-dimension is, if it can be so discerned, descriptively identical with that one and only one 2-dimensional point. This 1-dimension is closed and uniformly curved in the sense that seen from that 2-dimensional point, every part of this 1-dimension is necessarily such that can be taken up without being separated from any other parts and implies every other part. Consequently, in Type I space a 1-dimension can be described to become boundlessly denser and denser so as to descriptively coincide with that 1-dimension which forms the boundary of this space and consists of boundlessly and uniformly dense points. These points are so dense that none of them can be separately discernible from any others. Therefore, this space can be described to consist of a single 2-dimensional point with no quantity and a single 2-dimensional 1-dimension which is boundlessly and uniformly dense and therefore cannot be reduced into parts. If this 1-dimension can be discerned in terms of parts, then every one of such parts is descriptively identical with that 2-dimensional point. Between this 2-dimensional point and the boundary of this space there are points which are described to become boundlessly denser toward this boundlessly dense, closed boundary. The boundary of Type I space is therefore a 1-dimension such that becomes boundlessly and uniformly denser and can only be seen when it becomes densest (i.e. boundlessly dense). This means that if it becomes necessary to describe a ‘1-dimension’ within the boundary of this space, such a ‘1-dimension’ necessarily appears as if being curved toward the boundary ; for such a ‘1-dimension’ consists of points which become denser toward the boundary, and this means that if every possible ‘1-dimension’ is identified as a single type in terms of the uniformity in density, then ‘1-dimensions’ whose density is not uniform are made uniformly dense if and only if it is described to be more and more curved toward the boundary. In Type I space a 2-dimensional point is either inseparable from every other point or quantitiless. Such a point does not occupy a portion of space, and therefore its size

cannot be described, except saying that it only has a 1-dimensional unit. Type I space is determined, and holds, between two boundaries which describe each other. That is, it descriptively holds between a single 2-dimensional point and inseparable 2-dimensional points. The only substance of Type I space is these boundaries themselves. The substance of these boundaries occupies no portion of space which it binds ; for, otherwise, this space cannot be described to be closed and finite. A substance can be described to occupy a portion of space if and only if it is in a space. Type I space therefore descriptively manifests itself in terms of the description of its two boundaries. Its outer-boundary is a 1-dimension every part of which is every other part so that two and only two directions hold at any parts of it. Its inner-boundary is a 2-dimensional point which determines two and only two directions in such a way that each starts from where the other ends, so that a 1-dimension holds at every point where two directions start and end. These two boundaries describe each other in the sense that the meaning of each underlies that of the other. Any parts of the outer-boundary are identical with the inner-boundary and therefore with one another. Neither of these boundaries can be descriptively seen without the other. Between these two boundaries there exist a 1-dimension which starts at where there are no describable quantities and expands while boundlessly becoming dense and denser and ends at where there are no describable quantities. This 1-dimension exists between those two boundaries in order to describe a space between them. This 1-dimension is the form of Type I space and embodies the meaning of density, while those two boundaries are the substance of Type I space. If this 1-dimension is described at each level of density, then there are a boundless number of 1-dimensions between the inner-and outer-boundaries. That is, between those two boundaries there is neither a space nor any substances. Those 1-dimensions are, so to speak, the descriptive substance of the two boundaries of Type I space. They consist of points such that become denser at each level of density which is represented by each of those 1-dimensions. The two extreme limits of those 1-dimensions are the two boundaries of Type I space. They are made meaningful by what descriptively exists between them. Consequently, the space between those two boundaries is filled with points and 1-dimensions which are the descriptive substance of those two boundaries and therefore have no 2-dimensional quantities. The meaning of those points and 1-dimensions is, however, identical with that of those which are in Type II space (and its fictitious version). This is so because the relation between the two boundaries of Type I space and their descriptive substance is identical with that between schematic points and spatial substances of Type II space (and its fictitious version). The difference is, while in the former those two boundaries are made descriptively visible by their descriptive substance, in the latter spatial substances are made descriptively visible by schematic points, which bind Type II space (and its fictitious version) from outside Type II space (and its fictitious version). That is, schematic points are, so to speak, the boundary of Type II space (and its fictitious version). Therefore, from this standpoint the contents of those two types of space are identifiable.

2.2.3.2.6.2.1. If it can be assumed that the outer-boundary of Type I space can be reduced into parts, then it is reduced into a boundless number of points. Every one of those points then becomes two schematic points and therefore determines two and only two directions between them. That is, in every one of those points there holds a 1-dimension. Every possible part of this outer-boundary is identical with every other possible part. Consequently, every one of those points gives rise to an identical 1-dimension. These 1-dimensions necessarily intersect one another either at a same point or within a same region of space. This is so because

(i) all those points are identical with the centre (i.e. one and only one 2-dimensional point) of Type I space,

(ii) due to the necessity for their boundlessly multiple existence, they necessarily represent different directions with no parallel directions,

(iii) only the centre is left in Type I space after the outer-boundary disintegrates.

Consequently, the centre of Type I space is the only space where all those 1-dimensions can exist and generates a new space for themselves. This new space is therefore identical with the fictitious version of Type II space. That is, the two types of space necessarily have an identical fictitious version.

2.2.3.2.6.3. A given 1-dimension has a unit in Type II space and is, due to its infinite intersectibility, described to consist of an infinite number of 2-dimensional points (i.e. points of intersection). This unit is an infinite quantity, and its constituent points only have an infinitesimal quantity. Between every two of these infinitesimal points there is a unit which is infinitely divisible ; for in Type II space a 1-dimension consists of as many points as it is intersectible by different 1-dimensions. In Type II space centres multiplies themselves and this means that intersections multiplies themselves. Therefore, between any two points of intersection there is always at least one point of intersection. This infinitely divisible unit is a linear continuum and is the most basic 2-dimensional unit. Consequently, in Type II space the most basic 1-dimensional unit consists of such infinitely divisible 2-dimensional units. The unit of this infinitely divisible unit is a 2-dimensional 1-dimension which holds between two closest possible points of intersection. In Type II space if anything can be described, it is described in terms of such units of unit. Therefore, if relations are described between or among such units of unit, then anything can be described in Type II space in terms of such relations (i.e. numbers) or relations of such relations (i.e. functions). The most basic 2-dimensional unit is therefore not numbers but functions in the sense that Type II space necessarily consists of more than one point. This is identical with saying that the meaning of numbers is necessarily functional. An infinite quantity underlies an infinitesimal quantity, and vice versa. Neither is possible without the other. Only infinitesimal quantities can make the wholeness of a unit infinite, and only an infinite quantity can make every part of a unit infinitesimal. In Type II space a 1-dimension (i.e. a set of two 2-dimensional directions) consists of an infinite number of 2-dimensional points. A 2-dimensional 1-dimensions is the most basic constituent unit of such a 1-dimension and yet consists of an infinite number of 2-dimensional points ; for by the meaning of Type II space no two points can be conceived without at least one point between them. Consequently, there is no such as two closest points. The whole and a part therefore consists of an infinite number of 2-dimensional points.

2.2.3.2.6.4. The two types of space are summarized as follows : Type I space has one and only one 2-dimensional point. This point has no spatial quantity and forms the centre of Type I space. This space is enclosed within a closed boundary which is not reducible into parts. Within this space there are a boundless number of fictitious points which exist in order to describe the two boundaries of this space in terms of their density. At each level of density there is a fictitious 2-dimensional 1-dimension. The two boundaries of Type I space are the two extreme limits of such descriptive 2-dimensional 1-dimensions. Type II space has an infinite number of 2-dimensional points which are points of intersection of at least two 1-dimensions. Every one of such points is a centre of Type II space. Between any two points there is either a 2-dimensional 1-dimension or a combination of 2-dimensional 1-dimensions. A 1-dimension which holds between two schematic points is a pair of two symmetrically related 2-dimensional directions. The infinite extension of a 2-dimensional 1-dimension along its two given directions is such a 1-dimension. Both types of space have a common fictitious version. This fictitious version is a finite, boundless and uniformly curved space with one and only one centre which is either a 2-dimensional point with an infinitesimal quantity or a region of space with such 2-dimensional points.

2.2.3.2.6.4.1. There is no space where there is no substance, and vice versa. A space is a descriptively necessary way by which a substance exists, and vice versa. A space is the manifestation of the descriptive necessity of a substance. The substance of the 2-dimension is the 1-dimension. The 1-dimension is, by its own descriptive necessity, transformed into 2-dimensional substances and simultaneously generates 2-dimensional spaces. A space and a substance depend upon each other. Neither is

descriptively possible without the other. The 1-dimensional unit forms the boundary of each type of 2-dimensional space, while 2-dimensional units describe such boundaries from within those spaces. The two types of 2-dimensional space are 1-dimensionally identical. The 2-dimension internally refers to the innate necessity of the 1-dimension to coexist with, and to exist in, the 2-dimension, while it externally, collectively refers to the set of those two types of 2-dimensional space. Those two types of space are only transcendentally related to each other.

2.2.3.2.7. Type II space consists of an infinite number of centres and is therefore an infinite space. This infinite space is uniformly dense because a 1-dimension is intersectible by another wherever there is not yet a point of intersection. That is, every centre is identical in its composition, and centres breed and multiply themselves identically and infinitely and therefore make Type II space uniformly more and more densely populated until there exists no more space without externally, dynamically and infinitely expanding. This is made possible by the descriptive simultaneity between two initially intersecting 1-dimensions' acquiring a 2-dimensional locality and Type II space's coming into existence. This only means that no particular localities have any special claims upon the way by which Type II space exists. Type II space is therefore uniform in the sense that it is not discriminative about locations of points of intersection. Type II space is simply the class of every possible space which can be determined by any two possible 1-dimensions. Such spaces form a class because they are all 1-dimensionally identical and 2-dimensionally simultaneous. If every 2-dimensional point can be a centre, then any one of them can choose itself as the centre without causing any changes in the characteristics of Type II space. Every centre can describe itself as the centre of Type II space. However, the centre of Type II space is necessarily one, and one only ; for nothing can be identically described more than once without contradicting the initial condition. That is, there is no descriptive necessity for anything to repeat describing itself identically. Every centre of Type II space is identical with one another. Consequently, any one, but one and only one, of such centres can describe itself as the centre of Type II space. Type II space is externally described as a space in which every 2-dimensional point can be a centre. The internal description of this space is the description of the meaning of such a centre. Type II space is described in terms of centres, and these centres are described in terms of a centre. The description of centres is Type II space, and the description of a centre is centres. This difference constitutes the external and internal structure of Type II space. The description of the internal description of Type II space is identical with the external description of Type II space. Everything either describes Type II space or is described in Type II space. This is so because the 1-dimension is the only epistemological entity which is so far conditionalized, and because this 1-dimension simultaneously and identically applies to both types of 2-dimensional space. Those which are described in Type II space are so described as to describe Type II space. This means that in Type II space everything is everything else and is identical with itself. Consequently, if everything is a centre, and if it describes itself as a centre, then it, by itself, determines its relations to every other thing. That is, the description of a centre is identical with the description of every other centre. Every centre results in an identical description. Therefore, any one, but one and only one, centre can be described as a centre and becomes the centre of Type II space. This is the internal structure of Type II space. Type II space can be internally and externally described differently, while Type I space and their common fictitious version are internally and externally described identically. This is so because the latter has one and only one centre. The description of such a single centre is internally and externally identical because one and only one centre of a space is necessarily, in itself, the centre of that space. Consequently, the description of such one and only one centre is identical with that of a space which has this centre.

2.2.3.2.7.1. In Type II space a 2-dimensional point is determined by any two intersecting 1-dimensions. Consequently, a centre is anywhere where two sets of two 2-dimensional directions extend from one another. Two 2-dimensional directions form a set based upon a 1-dimension and are therefore directionally symmetrical to each other. A centre differs from every other centre if and only if it describes itself as a centre and becomes the centre ; for it, in itself, manifests the description of a centre. A

centre relates to every other centre in the sense that any one of them could have been the centre. The centre therefore embodies relations such that hold among every centre. This means that every centre is determinant to one another in their identical relation to the centre. That is, the centre describes every other centre in such a way that they are all mutually determinant. This is possible if and only if the centre is determinant to itself. If anything is determinant to itself, then between them there is a space such that describes how it is determinant to itself. If the centre is the description of a centre, then a space in which the centre is determinant to itself descriptively accommodates every other centre and makes them determinant to one another in their relation to the centre. This necessity of the centre's being determinant to itself differentiates the two determinant intersecting 1-dimensions of the centre from every other 1-dimension in Type II space. Only those two determinant intersecting 1-dimensions of the centre are described to relate to each other so as to determine and give rise to a centre which describes itself as a centre. Every other 1-dimension and centre can be described in their relation to those two determinant 1-dimensions. Consequently, only those two determinant 1-dimensions need to form a set of two sets of two 2-dimensional directions which extend from one another at a centre that describes itself as a centre. Every other 1-dimension can be described as a single 2-dimensional direction by those two determinant 1-dimensions, each of which forms a set of two 2-dimensional directions. Type II space is infinite. Therefore, neither those two determinant 1-dimensions nor any 2-dimensional directions have, unlike a finite 1-dimension, a reflex direction along a given direction. They extend into infinity. A given direction and its reflex direction of a finite 1-dimension become a spatial symmetry in Type II space and are so embodied by each of those two determinant 1-dimensions. Only those two determinant 1-dimensions need to embody this spatial symmetry ; for every other 1-dimension can be determined by those two.

2.2.3.2.7.2. Those two sets of two spatially symmetrical 2-dimensional directions relate to one another only in such a way that they comply with the uniformity of Type II space. This uniformity manifests itself as the equal density of 2-dimensional points in Type II space. That is, those two sets of two spatially symmetrical 2-dimensional directions relate to one another in order to give rise to a uniformly dense space. Type II space is generated by any two intersecting 1-dimensions and is therefore simultaneously assigned the characteristic of being-uniformly dense ; for Type II space only consists in and of points of intersection. That is, every two of intersecting 1-dimensions generate an identical space and simultaneously acquire their 2-dimensionality. Type II space is what identifies such identical spaces. Type II space is therefore inherently uniformly dense. This means that any two determinant 1-dimensions of a centre necessarily and inherently comply with this uniform density. The two determinant 1-dimensions of the centre of Type II space embody such uniform density ; for this characteristic of being-uniformly dense is 1-dimensionally inherent to Type II space. Type II space is determined by the two determinant intersecting 1-dimensions of a centre which describes itself as a centre. Those two determinant 1-dimensions determine Type II space and are simultaneously made 2-dimensional by this Type II space. Consequently, they, in themselves, represent the uniform density of Type II space. This representation takes place in such a way that ;

(i) those two determinant 1-dimensions are described to consist of points which are uniformly dense,

(ii) these two 1-dimensions spatially reflect the uniform density of Type II space,

(iii) at where these two 1-dimensions intersect each other (i.e. at the centre) each of them is spatially transformed into a set of two 2-dimensional directions which symmetrically extend from each other,

(iv) this set of two 2-dimensional directions is 2-dimensionally 1-dimensional because it spatially divides Type II space into two, each of which necessarily consists of an equal number of centres in order to comply with the uniform density of Type II space,

(v) each set of two 2-dimensional directions divides Type II space into two,

(vi) two sets of two 2-dimensional directions relate to each other and reflect the uniform density of Type II space in such a way that they divide each other further into two, each of which consists of an equal number of centres.

This means that the two determinant 1-dimensions of the centre intersect each other in such a way that they transform themselves into four 2-dimensional directions which perpendicularly extend from one another. Every other centre can be therefore described to be inherently determinable by two perpendicularly related 1-dimensional directions. Every 2-dimensional direction and their relations can be described by those four 2-dimensional directions which perpendicularly extend from one another. Those four perpendicularly related 2-dimensional directions extend from one another only at the centre. They arise only when Type II space necessitates itself to internally describe itself. The description of a centre is the centre. Every other 2-dimensional point is a centre. The centre can transpose itself to any centres because

(i) any centres could have been the centre,

(ii) every centre is inherently determinable by two perpendicularly intersecting 2-dimensional directions which coordinate themselves with the four perpendicularly extending 2-dimensional directions of the centre,

(iii) these four perpendicularly related 2-dimensional directions can describe whatever that exists in Type II space.

2.2.3.2.7.2.1. In the 2-dimension the 1-dimension becomes spatial and therefore becomes a 1-dimension. The two types of 2-dimensional space are given by the internal meaning of the 1-dimension and are therefore generated by the innate necessity for such an internal meaning. That is, the 1-dimension is 2-dimensionally transformed into two types of space and their substances. Consequently, in a 2-dimensional space the 1-dimension is inherently spatial in the sense that a space and a substance determine each other.

2.2.3.2.7.2.1.1. The description of Type I space and of the common fictitious version of both types of space is internally and externally identical ; for the description of a centre of a space with one and only one centre is identical with the description of that space. That is, the description of a space is identical with that of a substance if and only if a space has one and only one substance. Type II space consists in and of an infinite number of substances which are uniformly distributed and therefore make this space uniformly dense. Type I space consists of one and only one substance which is the only centre of that space. This centre is the inner-boundary of Type I space and describes itself as the outer-boundary of that space. Type I space is therefore filled with descriptive entities within those two boundaries. This inner-boundary describes itself in such a way that ;

(i) there necessarily exists a set of two and only two directions which it can determine,

(ii) these two directions are such that hold in and between a single point,

(iii) they are so determined by this single point and therefore cannot coincide with that point,

(iv) if they are outside that point and are determined by that point to hold in and between that point, then that point is necessarily such that starts from itself and ends at itself and therefore, in itself, gives rise to a set of two directions ; for if it starts from, and ends at, a same point, then both a starting-point and an

ending-point do exist, but are indiscernible from each other, which results in the twofoldness of a single point,

(v) this is possible if and only if that single point is quantitiless and multiplies itself into a single substance which is so densely populated with such single points that it cannot be reduced into parts.

This substance is the outer-boundary of Type I space and is generated by the inner-boundary of that space. Therefore, between those boundaries there are entities such that become boundlessly denser toward the outer-boundary. The inner-boundary has no quantity other than the 1-dimensional quantity, while the outer-boundary is itself a 2-dimensional quantity. The outer-boundary is therefore not spatial but self-spatial. It has no spatial quantity and therefore does not occupy a portion of space, neither externally nor internally. The inner-boundary is quantitiless because it necessarily coincides with its own space and does not externally exist in a space other than its own descriptive space which is filled with its own descriptive entities. The common fictitious version of both types of space also has one and only one substance which is the only centre of that space. The description of this centre is therefore internally and externally identical with that of this fictitious space ; for one and only one substance can be described in terms of itself. This centre is either a single 2-dimensional point with an infinitesimal quantity or a region of space which is filled with such points. In the former case that point is determined be every different intersecting 1-dimension and is therefore bound by schematic points. Consequently, a space with such a point is necessarily finite, boundless and uniformly curved. In the latter case each point is determined by a different set of two different 1-dimensions and therefore, together with every other point, necessarily forms a region of space which is bound by schematic points. Consequently, a space with such a region of space is necessarily finite, boundless and uniformly curved. This fictitious space with a single 2-dimensional point has no density because this point can only be itself the basic unit of density. This space therefore has no spatial properties which can describe its substance. The description of such a space is identical with that of its substance. If this space consists of a single region of space which is filled with 2-dimensional points, then such a region of space does not have a centre. This is so because this region of space consists of 1-dimensions such that every one 2-dimensionally and directionally differs from every other, and that every two of them intersect each other. This means that every particular set of two different intersecting 1-dimensions necessarily prevents every other from forming a centre. This region of space is necessarily such that becomes denser toward its centreless centre. Consequently, no particular sets of two intersecting 1-dimensions can be the determinant 1-dimensions of this space ; for this space appears different from every point. If a space is to be described in terms of its substance, then it is necessary for a space to be identical at every point in it. This means that this space has no spatial properties which can describe its substance without losing its own self-identity. The description of such a space is identical with that of its substances which are necessarily collectively taken together. Therefore, a space with one and only one centre is internally and externally described identically. Only Type II space can be internally and externally described differently. This difference makes it possible for Type II space to spatially describe whatever that is in it. This difference is, so to speak, the boundary of this infinite Type II space. That is, anything can be described to be within the boundary of Type II space if and only if it is spatially describable.

2.2.3.2.7.2.1.2. The external description of Type II space differs from the internal one. This is so because Type II space is externally one and only one space which consists in and of an infinite number of centres, while it is internally an infinite number of identical spaces which consists in and of one and only one centre. The description of Type II space in terms of centres differs from that of centres in terms of Type II space. Type II space can be described as the totality of an infinite number of

centres. These centres, however, can only be described to be such that any one of them could have been the centre of this totality which they themselves form. A space of centres is necessarily such that ;

(i) if it is seen externally (i.e. from the collective standpoint of centres), it is a totality with no centre,

(ii) if it is seen internally (i.e. from the individual standpoint of each centre), it is an infinite number of totalities with one and only one centre.

This is so because a space of centres is necessarily a space which is identical with every possible centre. Consequently, its internal description consists of two parts : one is the self-description of a centre as the centre, the other is the self-description of the centre as a centre. That is, the description of a centre forms the centre, and the description of the centre forms centres. The difference between the external description and the internal one is a descriptive necessity and is therefore not a property of Type II space itself. In a space of centres any centres can be the centre. However, one and only one centre can describe itself as a centre and becomes the centre. This is based upon the descriptive necessity that no relations can be described between or among identical descriptions. Whatever that is once understood does not require itself to be understood again. By this descriptive necessity the description of a centre as a centre, leads itself to an infinite number of identical spaces with one and only one centre and results in one and only one description of such spaces. Consequently, that difference is not a property of Type II space but a necessity which Type II space imposes upon itself so as to comply with the initial condition.

2.2.3.2.7.2.1.2.1. Whichever centre is taken as the centre, Type II space remains identical. Every centre has at least two intersecting 1-dimensions, two and only two of which are the determinant 1-dimensions of that centre. Such two determinant 1-dimensions of the centre are also the determinant 1-dimensions of Type II space and form four 2-dimensional directions which perpendicularly extend from one another. These four perpendicular 2-dimensional directions embody the uniform density of Type II space. This is so because this uniform density is a necessary characteristic of Type II space and is therefore necessarily represented by whatever that determines Type II space. These four perpendicular 2-dimensional directions can spatially determine every substance and every combination of them in Type II space, based upon the meaning of a centre that any centres could have been the centre. This is possible because every centre is related to every other in their identical reference to the centre in the sense that the centre represents the uniform density and infinity of Type II space. That is, the two determinant intersecting 1-dimensions of the centre embody the uniform density of Type II space by forming four perpendicular 2-dimensional directions which infinitely extend from one another and therefore also represent the infinity of Type II space. Such four 2-dimensional directions can transpose the centre to any positions in Type II space and therefore describe every possible centre of Type II space. This is so because these four 2-dimensional directions are described to consist of an infinite number of points which are infinitely and uniformly dense, and are also described to be related to one another in such a way as to be able to determine every possible position in Type II space. That is, every centre can be the centre and therefore inherently has two determinant intersecting 1-dimensions which are necessarily identical with those of the centre in terms of the way by which they embody the uniform density and infinity of Type II space. Unless they are ones which descriptively constitute the four perpendicularly related 2-dimensional directions, every centre is necessarily in one of the quarters of Type II space and therefore can be uniquely determined by means of a set of two points each of which comes from the two surrounding 2-dimensional directions of a quarter to which a given centre belongs. The meaning of such a set of two points is based upon the necessity of

Type II space that every centre is determinable inherently in the same way by which the centre is determinable ; for the centre is the description of a centre. The two determinant 1-dimensions of every centre other than those of the centre, however, do not form four perpendicular 2-dimensional directions. This is so because the centre stands for the description of every centre. Consequently, the two determinant 1-dimensions of any centres can be spatially determined by those of the centre and therefore descriptively transform themselves into the internal meaning of any centres which can be described to be determinable by two intersecting 1-dimensions. This makes Type II space a space of infinitely dense, uniform lattice which can be described as the spatial self-multiplication of the four basic perpendicular 2-dimensional directions of the centre. These four basic 2-dimensional directions are the form of the internally described Type II space and stand for the meaning of the x-y coordinate. They become the x-y coordinate with the introduction of numbers. With this x-y coordinate Type II space becomes the space of an infinite number of pairs of real numbers. In this space of pairs of real numbers any 2-dimensional directions and 2-dimensional 1-dimensions can be described as a function, which is a relation between two pairs of real numbers, based upon the properties of numbers. Any combinations of them are therefore described as a relation of functions or a function of functions. A 2-dimensional 1-dimension holds between two nearest possible pairs of real numbers and is the most basic 2-dimensional unit. Such a 2-dimensional unit underlies the principles of differentiation and also makes the meaning of a number essentially functional. In Type II space there is no such as a ‘curve’ in the sense of Type I space. A ‘curve’ is merely a functional combination of 2-dimensional 1-dimensions. The notion of π-constant is introduced by the descriptive necessity that the two types of space are necessarily under a same dimension. The notion of π-constant is geometrically transcendental because logic precedes geometry, and therefore because not every logical relation can be geometrically describable. That is, unlike in the logical space the logical relation between the two types of space geometrically remains descriptively incommensurable. In the same sense the π-constant is algebraically transcendental. This is so not in the sense that the π-constant is a non-algebraic number but in the sense that geometry precedes the schema of numbers, and therefore that not every part of geometry is numerically representable. Type I and II spaces are geometrically and algebraically incommensurable to each other because they are originated in the logical space. This means that their relation can only be described logically. This is the meaning of the transcendence of the notion of π-constant. The π-constant differs from an irrational number in the sense that it cannot even be ‘pointed at’ as a gap on a sequence of real numbers. This is so because assuming that both types of space can be numerically represented on a same sequence of real numbers, the notion of π-constant exists between those two types of space, and not in each of them. The meaning of the notion of π-constant is the descriptive necessity that the two types of space are necessarily under a same dimension. This means that the two types of space cannot coexist independently from each other under the same 2-dimension, and therefore that it is necessary for each to be able to accommodate the other. With the introduction of the notion of π-constant there are no combinations of 2-dimensional 1-dimensions which cannot be described in terms of functions. Numbers can only be geometrically generated. Consequently, the x-y axes relate to each other in the exactly same way by which the two determinant 1-dimensions of the centre of Type II space relate to each other. The meaning of a type of numbers is a geometrical property. ‘0’ geometrically stands for the descriptive necessity that the two determinant 1-dimensions of the centre necessarily form four perpendicular 2-dimensional directions by intersecting each other. Consequently, ‘0’ necessitates the x-y axes to differentiate themselves into four numerically (i.e. functionally) symmetrical sequences of numbers which infinitely extend from one another. + and − stand for such a symmetry. The two determinant 1-dimensions of the centre also determine Type II space itself. Therefore, ‘0’ also means that it is necessary for

any two identical sequences of number to be identified under a same schema. This means that ‘0’ is necessarily a 2-dimensional number. ‘0’ can be transposed to any 2-dimensional positions by means of a function. This is so because ‘0’ can be related to any 2-dimensional positions by means of a functional relation of 2-dimensional 1-dimensions. This is the meaning of the x-y coordinate.

2.2.3.2.7.2.1.2.1.1. The meaning of a number is in the totality of numbers ; for a number is essentially functional. A number is, in itself, meaningless. Numbers are necessarily geometrical.

2.2.3.2.7.2.1.2.1.2. Mathematical dimensions are an extension of the internal description of Type II space ; for Type II space can be determined by at least two determinant intersecting 1-dimensions. The number of determinant intersecting 1-dimensions can extend from two to n (i.e. any countable numbers) with or without a geometrical or physical necessity. Any mathematical dimensions higher than the 2-dimension are based upon this 2-dimensional, geometrical Type II space. Only the 3-dimension and the 4-dimension have respectively a geometrical and physical necessity.

2.2.3.2.7.2.1.2.2. Type I and II spaces are 2-dimensionally two distinct schemata. Consequently, in order to be under a same dimension it is necessary for them to schematically describe each other in each of them ; for they are both simultaneously necessitated by an identical internal meaning of the 1-dimension. This is the meaning of the notion of π-constant and of transcendental numbers in general. They are, however, 1-dimensionally identical. This 1-dimensional identity is not in terms of a set of two mutual-descriptions but in terms of their common descriptive necessity (i.e. the internal meaning of the 1-dimension). That is, Type I and II spaces 2-dimensionally see each other in each of them, while they 1-dimensionally see themselves in each of them. Consequently, a 1-dimension is 1-dimensionally identical and 2-dimensionally differentiative in each type of space. This means that the descriptive form of a 1-dimension is identical if it is seen from within each type of space, but differs if each type of space is seen from the other. Numbers are the description of such a descriptive form of a 1-dimension in the 2-dimension and are therefore necessitated by the internal identity and external distinctness of the two types of space in the 2-dimension. The notion of π-constant represents the external distinctness, while numbers represent the internal identity. In this sense the notion of π-constant stands at the same descriptive level as numbers. Neither of the notion of π-constant and numbers is possible without the other. This is so because whenever the two types of space have a common geometrical property, an identical types of numbers must be found in both types of space. This necessarily assumes the notion of π-constant. The schema of arithmetic is originated in the schema of geometry in the sense that a type of numbers represents a geometrical property. The schema of arithmetic is, however, distinct from that of geometry in the sense that it is the presentation of a descriptive necessity of the latter, while the latter is the description of the structure of description of e. Numbers are therefore generated, but not conditionalized. This descriptive necessity is to descriptively identify geometrical properties which are common to both types of 2-dimensional space.

2.2.3.2.7.2.1.2.2.1. Numbers are originated in the geometrical 2-dimension. There are two distinct types of numbers. One is those which are common to both types of 2-dimensional space, while the other is those which can only be found in one of them. The former is the internal description of each type of space which necessitates itself to be identified with the other. The latter is an internal description within one of them. The former consists of natural, integral and rational numbers. The latter consists of irrational and imaginary numbers (and therefore also complex numbers).

2.2.3.2.7.2.1.2.2.2. Natural numbers are the descriptive form of recursiveness, integral numbers are that of symmetry, and rational numbers are that of infinite divisibility, while irrational numbers stand for the necessity for the x-y axes to relate to each other. Consequently, irrational numbers cannot be located on either of the sequence of numbers which consists of natural, integral and rational numbers. They exist necessarily between those sequences and therefore only as gaps in a sequence of natural, integral and rational numbers. Real numbers therefore consists of natural, integral and rational numbers together with gaps among them. An imaginary number is the descriptive inverse of irrational numbers and is therefore one, and one only. This is so because it is found in the common fictitious versions of Type I and II spaces. The fictitious versions of Type I and II spaces are common to both types of space and are therefore identical with each other, but are descriptively based upon the adversative of the descriptive necessity of each type. They are also descriptively a single space which is identical with the description of its own centre.

2.2.3.2.8. Type II space is commonly known as the Euclidean 2-dimensional space. The Euclidean 2-dimensional geometry is identical with descriptions within Type II space. This space, under the 2-dimension, descriptively but transcendentally incorporate Type I space. Therefore, in Type II space there are an infinite number of combinations of 2-dimensional 1-dimensions, which, together with the notion of π-constant, generate every known Euclidean 2-dimensional figure. Every one of such figures is therefore algebraically describable with the introduction of numbers (and therefore of the x-y coordinate and functions). The Euclidean 2-dimensional geometry is the totality of internal descriptions of Type II space. Therefore, within the Euclidean geometry there can be no proofs for anything which is concerned with the external description of Type II space. This explains the postulate of parallels, which is concerned with the schema of the Euclidean geometry itself. The following is the schematic description of the impossibility of the proof of the postulate of parallels :

I) If Type II space is already given, then :

I-I) what is meant by a given straight line and a given point is, respectively, and in Type II space, a 2-dimensional direction and a 2-dimensional point. This is so because, otherwise, there can be no space. That is, a given straight line and a given point are necessarily given together in a same space.

I-I-i) There are infinitely many 2-dimensional points, every one of which is a centre of every possible 2-dimensional direction. At one of these a given 2-dimensional direction can be descriptively seen. At any one of the others it is yet to be descriptively seen if there is any 2-dimensional direction(s) which can be described to be ‘parallel’ to this given 2-dimensional direction.

I-I-ii) If Type II space is already given, then with it and necessarily its uniform density is also given,

I-I-iii) It is determined by Type II space itself that such two 2-dimensional points have a certain 2-dimensional distance between them. This is so because every one of 2-dimensional points necessarily occupies a portion of space. It is also determined by Type II space itself that this 2-dimensional direction which is given at one of any 2-dimensional points is necessarily either of any two possible determinant 1-dimensions of that point. This 2-dimensional direction therefore consists of two and only two 1-dimensional directions and therefore extends into infinity. Equally it is intersectible as many times as every other 2-dimensional directions.

I-I-iv) This given 2-dimensional direction is necessarily uniformly dense and has a centre.

I-I-v) The other 2-dimensional point is also a centre of every possible 2-dimensional

direction and has exactly as many 2-dimensional directions as every other 2-dimensional point. Every one of these 2-dimensional direction is necessarily either of any two possible determinant 1-dimensions of this point and is therefore uniformly dense.

I-I-vi) Relative to the center of Type II space, including the case that either of the above two 2-dimensional points is the very center, every centre is transpositional to every other centre.

I-I-vii) That given 2-dimensional direction has a centre. Consequently, this centre is, together with this given 2-dimensional direction, transpositional to the other 2-dimensional point.

I-I-viii) It is necessary that one and only one of 2-dimensional directions of the other 2-dimensional point coincides with that given 2-dimensional direction. This is so because every centre is identical with every other centre, except for their spatial location.

I-I-ix) It is necessary that there are spatial locations for the following two reasons ; (1) it is descriptively necessary that Type II space is determinable by any two intersecting 1-dimensions which are given their 2-dimensional spatial location only simultaneously as they intersect each other and determine Type II space, (2) any spaces which are so determinable, are all simultaneous and identical because every possible 2-dimensional spatial location is identical in their descriptive meaning of being a determinant factor of Type II space. Consequently, Type II space is necessarily such that its every possible part (i.e. 2-dimensional points) is identical, is a centre of this space, and yet has a spatial location. Once Type II space is given, such spatial locations appear as if created by a simultaneous transposition of the centre, which is the outcome of a centre's describing itself as a centre. This simultaneous transposition is made possible by the uniform density of Type II space. The centre is the description of a centre. Therefore, Type II space is uniformly dense in the sense that it is the spatial self-multiplication of the centre.

I-I-x) That given 2-dimensional direction has a centre. This centre can be spatially self-identified with the other 2-dimensional point. This is so because every centre can be described to be a transposition of the centre and is therefore identical with every other centre. If every centre is identical with every other centre, then at the other 2-dimensional point there can be one and only one 2-dimensional direction which is identical with that given 2-dimensional direction. This one and only one 2-dimensional direction can be so identified because it is the only one which does not intersect that given 2-dimensional direction and comes to coincide with it when the centre of this given 2-dimensional direction is spatially self-identified with the other 2-dimensional point by means of the transpositionability of the centre of Type II space.

I-I-xi) This one and only one 2-dimensional direction which is spatially self-identified with that given 2-dimensional direction, necessarily coincides with that given 2-dimensional direction and therefore, given a space between them, does not intersect it. This is so because the uniform density of Type II space also means the uniformity of space and directions. Such two 2-dimensional directions which have a space between them and do not intersect each other, are described to be 'parallel' to each other.

I-II) Therefore, at any given 2-dimensional points there necessarily exists one and only one 2-dimensional direction which can be described to be directionally identical with (i.e. parallel to) a given 2-dimensional direction. A 2-dimensional point and a 2-dimensional direction can be described to be both 'given' if and only if they do not overlap each other. This is so because Type II space consists in and of an infinite number of 2-dimensional points. Consequently, if they overlap each other, then a given 2-dimensional point is described to be a part of a given 2-dimensional direction.

I-III) However, if Type II space is already given, then this parallelness is internally already described in that space. What is meant by Type II space's being already given, is not that a straight line can be 'drawn' parallel to a given straight line through a given

point, but that there exists a space whose structure, by means of its descriptive necessities, dictates a straight line and a point to be descriptively necessarily such that one and only one straight line can be described identical with (i.e. parallel to) a given straight line through a given point. Consequently, the statements I-I-i) – I-I-xi) are not about any parallel lines themselves but about a space itself in which every possible straight line is already drawn in accordance with their own necessity and results in manifesting that space itself among themselves.

I-IV) This means that it does not make sense to ask within such a space if there is a 2-dimensional direction(s) which can be described to be parallel to a given 2-dimensional direction through a given point. Consequently, this schematic description is, if it is about parallel lines themselves, only superfluous.

II) If Type II space is not yet given, then :

II-I') What is meant by a given straight line in that postulate, is identical with either of any two determinant 1-dimensions, which holds between two schematic points and therefore can form a schema of its own. What is meant by a given point in that postulate, is identical with a set of two schematic points and therefore can form a schema of its own. Either of any two determinant 1-dimensions except those which share a same 2-dimensional point with the above straight line, holds between those two schematic points.

II-I") A given straight line means the same as the above. However, there is no such as a given point. This is so because there is no space into which a single point can be given by itself, or in which a single point can be formed by itself. Consequently, if this is the case, then this assumption is absurd.

II-II) If II-I') is the case, then there is an independent schema of Type II space, and also there is another independent schema of either the 1-dimension or Type I space or Type II space. This is so because unless a given straight line and a given point are given independently, they necessarily assume a space between them and therefore contradict II).

II-III) If a given straight line and a given point form two independent schemata, then there can be no spatial relations between the two ; for there is no schema shared by the two, and therefore there is no space between them. The parallelness is a spatial relation. Consequently, this assumption is absurd.

II-IV) Whichever of II-I') and II-I") may be the case, it results in the absurdity (i.e. the indescribability). A given straight line and a given point are necessarily given in a same space and therefore already assume that there is a space into which they are together given. The postulate of parallels is descriptively innate to Type II space and therefore can only be schematically demonstrated as the construction of that space itself.

III) A space into which a given straight line and a given point assume themselves to be given, is not limited to Type II space. They can be given into Type I space or the common fictitious versions of both types of space. This gives rise to the non-Euclidean geometry.

2.2.3.2.8.1. Type I space and the common fictitious versions of both types of space are commonly known as non-Euclidean spaces. The non-Euclidean geometry consists in descriptions within these spaces. These spaces, under the 2-dimension, descriptively but transcendentally incorporate Type II space. This is so because Type I and II spaces necessarily describe each other in each space, and therefore because their common derivatives contain both elements. This means that Type II space provides Type I space with the notion of a ‘straight line’, while Type I space provides Type II space with the notion of a ‘curve’. The notion of π-constant stands for this pair of notions. A ‘straight line’ and a ‘curve’ are transcendentally identical outside Type I and II spaces.

The notion of π-constant is the bilateral form of mapping between the two types of space. The common derivatives of Type I and II spaces are therefore provided with both notions of a ‘straight line’ and a ‘curve’. They are derived by assuming the impossibility of parallel 2-dimensional directions in the case of Type II space, and by assuming the finite density of the outer-boundary in the case of Type I space. There are two versions of them. In the case of Type II space parallel 2-dimensional directions are impossible

(i) Version 1 : because this space has one and only one 2-dimensional point, or

(ii) Version 2 : because this space has one and only one region of space in which 2-dimensional points become denser toward the centreless centre.

In the case of Type I space the finite density of the outer-boundary of this space is possible in terms of boundlessly dense 2-dimensional directions

(i) Version 1 : which share one and only one 2-dimensional point,

(ii) Version 2 : which share one and only one centreless central region of space.

2.2.3.2.8.1.1. The notion of a ‘straight line’ can be provided in Type I space and version 1 and 2 spaces if and only if those spaces are already given. Otherwise, this notion itself (i.e. a ‘straight line’) conditionalizes those spaces themselves. Within those spaces this notion itself is identical with their own internal self-description. This means that from the standpoint of Type II space

(i) in Type I space a ‘curve’ and a ‘straight line’ are respectively a straight line and a curve,

(ii) while in Type II space a ‘curve’ and a ‘straight line’ are respectively a curve and a straight line.

From the standpoint of Type I space the above holds simply the other way around. If a straight line is whatever that follows the internal structure of each of Type I and II spaces, then a curve is the description of such a straight line by the internal structure of the other space. In this sense a straight line and a curve underlie each other in version 1 and 2 spaces. Consequently, both are a straight line, or neither is a straight line.

2.2.3.2.8.2. The postulate of parallels must be therefore tried in every other space on both assumptions that (i) a space is already given, (ii) it is not yet given.

I') Type I space is already given, then :

I'-I) What is meant by a given straight line in this postulate, is any 2-dimensional directions which can be found in Type II space and is placed in Type I space as a ‘straight line’. This ‘straight line’ is necessarily within Type I space and therefore exists between the outer- and inner-boundaries in such a way that it extends from any corner of the outer-boundary to any other corner. This is so because the parallelness must hold throughout Type I space. What is meant by a given point in this postulate, is any points which are described in Type I space to become boundlessly denser toward the outer-boundary so as to form the outer-boundary. It therefore cannot be a part of the outer-boundary and is a descriptive entity of the inner- and outer-boundaries ; for it can only exist within the outer-boundary of Type I space.

I'-I-i) A ‘straight line’ and a straight line necessarily differ from each other. This is so because a straight line is necessarily dictated by the descriptive necessity of a space. Consequently, a straight line of Type I space can only be the outer-boundary which is the extreme limit of descriptive 2-dimensional 1-dimensions which hold at each level

of density of descriptive points. Descriptive points become uniformly denser because the outer-boundary is necessarily such that has two and only two directions which are determinable by and from the inner-boundary. Neither the outer-boundary nor its descriptive bases (i.e. descriptive 2-dimensional 1-dimensions) can be a ‘straight line’ because they can only be a straight line. This means that a given ‘straight line’ is a line which is described to consist of points with no uniform density among them. It is described to consist of points which become boundlessly denser toward the outer-boundary. A given point is any point within the outer-boundary of Type I space and therefore can include the inner-boundary itself. This is so because it is the inner-boundary itself that self-multiplies itself as descriptive points in order to self-describe the outer-boundary in terms of the limit of density, and because a given ‘straight line’ consists of such descriptive points.

I'-I-ii) ‘Straight lines’ can be a class of ‘straight lines’ if and only if they consist of points with uniform density. A ‘straight line’ can be descriptively reduced into a totality of points. The only property which holds among points is the density. In Type I space ‘straight lines’ consist of points whose density varies within a ‘straight line’ and among ‘straight lines’. A comparison can only be made among entities based upon some common property. This is identical with saying that entities can be put into a class in terms of a common property. This means that a comparison can only be made within a class, and necessarily based upon the intension of that class. This is so because a comparison can only be the description of a property between or among differentiative totalities. Therefore, a comparison can be made between or among ‘straight lines’ if and only if they consist of points whose density is uniform either within every ‘straight line’ or among every ‘straight line’. The latter is, however, impossible because not every ‘straight line’ consists of a same number of points. This means that in Type I space ‘straight lines’ can be made into a class if and only if every ‘straight line’ has a uniform density in it, but not necessarily among them. That is, this class is based upon the uniformity of points in each ‘straight line’, and not upon the density of points in each ‘straight line’. Therefore, it is descriptively necessary that a given ‘straight line’ curve boundlessly toward the outer-boundary in order to uniformly equalize its density. That is, in Type I space ‘straight lines’ can be compared if and only if they are curved and are made straight lines.

I'-I-iii) Every given ‘straight line’ is curved necessarily in such a way that while its centre remains where it is given to be located, the two sides of this centre curve themselves boundlessly toward the outer-boundary and eventually meet each other at the densest point, which is a part of the outer-boundary. Consequently, it is, like the outer-boundary, not only curved but also closed. This is so because the variations of the density of points in each of those two sides are identical, and therefore because those two sides curve identically and symmetrically toward each other and meet each other at an identical part of the outer-boundary.

I'-I-iv) Every given ‘straight line’ has two curved selves. That is, they have two ways of equalizing their density. This is so because the outer-boundary is itself symmetrical. Consequently, a given ‘straight line’ can equalize its density by curving itself either to the nearest part or to the furthest part, of the outer-boundary. This means that in Type I space a ‘straight line’ cannot remain to be a 2-dimensional direction. In Type I space there are no 2-dimensional directions which are spatially relative to one another. A given ‘straight line’ has two identical selves in terms of the outer-boundary.

I'-I-v) A point is described to be given not only in Type I space but necessarily in a descriptive correlation to a given ‘straight line’. Consequently, such a point is made meaningful in two ways : one is in terms of its given location in Type I space, the other is in terms of its descriptive correlation to a given ‘straight line’. These two ways coincide if and only if a point is given in such a way that it is the centre of a ‘straight line’ and is descriptively correlated to a given ‘straight line’. This is so because Type I space determines the meaning of a point in such a way that it can have one and only one ‘straight line’, such that, seen from that point, holds symmetrically to the

outer-boundary. Therefore, there is one and only one ‘straight line’ which is parallel to a given ‘straight line’ and goes through a given point if and only if this point is given on a ‘straight line’ which is perpendicular to that given ‘straight line’ and goes through the centre of that given ‘straight line’. This is so because for every ‘straight line’ there is one and only one point at which it holds symmetrically to the outer-boundary. That is, a point and a ‘straight line’ which goes through this point, necessarily have a one-one correspondence, due to the internal structure of Type I space. Parallel ‘straight lines’ are, however, curved in Type I space necessarily in such a way that they meet at two identical parts of the outer-boundary. This is so because they are identically symmetrical to the outer-boundary and therefore share an identical nearest part and furthest part of the outer-boundary.

I'-I-v-i) If the above coincidence is not the case, and if a point is only meaningful in terms of its given location in Type I space, then it has a ‘straight line’ such that is parallel to a given ‘straight line’ from the standpoint of Type I space, but not from that of Type II space. That is, it has a parallel ‘straight line’ to a given ‘straight line’ only in the sense that it follows the internal structure of Type I space. Consequently, those ‘parallel straight lines’ are curved in such a way that (1) they have different nearest and furthest parts of the outer-boundary and therefore do not meet at the outer-boundary, (2) they intersect each other within Type I space at least when they are curved toward two different furthest parts of the outer-boundary. This is so because those ‘parallel straight lines’ are not identically symmetrical to the outer-boundary. This only amounts to say that what is parallel in Type I space is not parallel in Type II space, and vice versa.

I'-I-v-ii) If that coincidence is not the case, and if a point is only meaningful in terms of its descriptive correlation to a given ‘straight line’, then it has a ‘straight line’ such that is parallel from the standpoint of Type II space, but not from that of Type I space. This only amounts to repeat I'-I-v) because if there is a ‘parallel straight line’ to a given ‘straight line’ through a given point, then such a ‘parallel straight line’ is necessarily described to have a centre. This is so because this ‘parallel straight line’ must also be curved.

I'-I-vi) In Type I space a given ‘straight line’ therefore has two identical selves (i.e. straight lines) such that are uniformly and symmetrically curved and are closed at the outer-boundary. If at a given point there is a ‘straight line’ which is parallel to a given ‘straight line’, then this parallel ‘straight line’ is curved and closed at two identical parts of the outer-boundary. Every parallel ‘straight line’ meets at two identical parts of the outer-boundary. If at a given point there is a ‘straight line’ which can be described to be ‘parallel’ to a given ‘straight line’ in the sense that both of them are determined by the internal structure of Type I space (in the sense that both of them are symmetrical to the outer-boundary), then those two ‘parallel straight lines’ are curved and closed in such a way as to intersect each other within the outer-boundary. Therefore, to a given ‘straight line’ there can be no parallel ‘straight line’ through a given point. This means that in Type I space there are no parallel ‘straight lines’ or ‘parallel straight lines’ without meeting or intersecting each other.

I'-II) Therefore, it is concluded that in Type I space there are no parallel ‘straight lines’ or ‘parallel straight lines’. Every parallel ‘straight line’ necessarily meets one another, and every ‘parallel straight line’ necessarily intersects one another. However, the notion of a straight line (i.e. a ‘straight line’) is not originated in Type I space. The above proof that there are no ‘straight lines’ which are parallel or ‘parallel’ to each other, is the description of Type II space in Type I space. The notion of a straight line is transcendental in Type I space in the same sense that that of a circle or curve is so in Type II space. The above proof proceeds from the supposition that ‘if there are ‘straight lines’, and if they are ‘parallel’’, to the conclusion that ‘then they are not parallel’. Such a supposition is possible if and only if Type I space transcendentally accommodates Type II space. This means that those two types of space must be already in existence in order even to ask if there are parallel straight lines.

Consequently, I'-I-i) - I'-I-vi) do not constitute a proof, but are merely a description of the demonstrative construction of Type I and II spaces.

I") The derived space, Version 1, is already given, then :

I"-I) What is meant by a given straight line, is any 2-dimensional directions. In Version 1 space 2-dimensional directions are boundlessly many and uniquely different. What is meant by a given point, is the centre (i.e. the only 2-dimensional point) of this space. This is so because Version 1 space consists in and of every possible different 2-dimensional direction and a single 2-dimensional point as a centre.

I"-I-i) This space is identical with the description of its own centre. In this space the centre is where there is everything. There are no parallel 2-dimensional directions. The centre contains every possible 2-dimensional direction and the only substance (i.e. a 2-dimensional point) of this space. Consequently, the description of this centre is also the boundary of this space. This space is finite and boundless. It is finite because every 2-dimensional direction has the length of a 1-dimensional unit and intersect one another at a same point. It is boundless because this 1-dimensional unit is 2-dimensionally indefinite. Therefore, Version 1 space is a space which is identical with its centre, is uniformly curved and closed, and extends boundlessly.

I"-I-ii) In this space there can be one and only one given point. This is so because this space has one and only one 2-dimensional point which is also the very centre of this space.

I"-I-iii) A given straight line has two and only two 1-dimensional directions and consists of a single 2-dimensional point. Consequently, although this space is curved toward its centre and is finite, a given straight line remains directionally uniform.

I"-I-iv) A point can be given if and only if it is identical with the only 2-dimensional point. This 2-dimensional point is the very centre of Version 1 space as well as of every possible given straight line. Consequently, at a given point there are a boundless number of straight lines which can be described to be ‘parallel’ to a given straight line. This is so because Version 1 space is descriptively identical with its own centre (i.e. a given point). Therefore, within Version 1 space and at a given point every possible straight line is identical with one another and is therefore ‘parallel’ to one another.

I"-II) Therefore, it is concluded that in Version 1 space there are a boundless number of straight lines which are ‘parallel’ to a given straight line through a given point. However, this does not constitute a proof ; for this is the description of a space, and not of a straight line and point.

I'") The derived space, Version 2, is already given, then :

I'"-I) What is meant by a given straight line and a give point, is necessarily found within the boundary of this space, which is finite and boundless.

I'"-I-i) This space is identical with the description of its own centre for the same reason as Version 1 space. However, Version 2 space differs from Version 1 space in the sense that it has no central point. The centre of Version 2 space is not a 2-dimensional point but a region of space. In this space there are no parallel 2-dimensional directions, and there are also no central point at which every 2-dimensional direction intersects one another. Every 2-dimensional direction is directionally unique and is therefore different from one another. Every two of them intersect each other in such a way that 2-dimensional points form one and only one central region of space. This region of space is necessarily such that 2-dimensional points become boundlessly denser toward the centreless centre.

I'"-I-ii) The description of this region of space forms the boundary of Version 2 space.

A straight line and a point can only be given within this boundary. Version 1 space consists in and of a single substance (i.e. the only 2-dimensional point) and therefore does not possess any spatial relations. Version 2 space, however, consists in and of a single region of space in which substances (i.e. 2-dimensional points) are spatially related to one another. The way by which those substances are related, is the internal structure of that space and therefore shows what a straight line is in that space. A point can only be a 2-dimensional point. In Version 2 space 2-dimensional points are related to one another in such a way that they become denser and denser toward the centreless centre. Consequently, a given straight line consists of 2-dimensional points which are not uniformly dense. A comparison can hold between or among such straight lines if and only if they are made into a class. Such a class can only be formed in terms of the uniformity of points in each straight line. This is so because, on one hand, not every straight line consists of a same number of 2-dimensional points and therefore cannot have a same density, on the other, the uniformity and density are the only properties which hold among points. Consequently, 2-dimensional points which constitute a straight line , necessarily equalize their density and make this straight line curved toward the centreless centre. This is so because in Version 2 space a straight line consists of points which become denser and denser toward the centreless centre.

I'''-I-iii) A given straight line is therefore curved toward the centreless centre in such a way that while maintaining same two positions at the boundary, its centre (i.e. a 2-dimensional point which is nearest to the centreless centre) symmetrically and uniformly approaches the centreless centre. Version 2 space is finite and boundless for the same reason as Version 1 space. The boundary of Version 2 space is, like that of Version 1 space, the self-description of its centre and therefore extends boundlessly. That is, this self-description of a centre can only be indefinite and allows itself to extend boundlessly. This is so because 2-dimensional directions hold between two schematic points which do not descriptively exist within this space, and therefore because the length of such 2-dimensional directions are indefinite. The parallelness of a straight line must hold throughout a space. Therefore, a straight line extends from any corner of the boundary to any other corner.

I'''-I-iv) Version 2 space becomes boundlessly denser toward a centre which has no central point. This means that a given straight line forms an open, indefinite line which is curved in such a way that its centre boundlessly approaches the centreless centre. When and where it reaches the centre, there is nothing to reach.

I'''-I-v) A given point is any 2-dimensional points except those on a given straight line. It, unlike one in Type I space, is not meaningful in two ways ; for Version 2 space is descriptively determined by its own centre which has no central point. A straight line is therefore symmetrical not to the boundary but to a centre which has no centre. Such symmetry cannot be described. Consequently, it cannot also be described that there is a one-one correspondence between a given point and a straight line such that is symmetrical to the centre and goes through that point. This means that a given point is only meaningful in its descriptive correlation to a given straight line. If there is a straight line such that can be described to be parallel to a given straight line through a given point, then this line also consists of 2-dimensional points which become denser toward the centreless centre. Consequently, this straight line is described to be curved so that a comparison can be made between a given straight line and this line. It is curved toward the centreless centre in the same uniform way as a given straight line. This is so because if two straight lines are parallel to each other, then they are identically symmetrical to the centreless centre. If this is the case, then there are a boundless number of lines which can be described to be parallel to a given straight line through a given point. This is so because (1) those two parallel straight lines are curved in a same uniform, symmetrical way and therefore do not intersect each other, (2) at the very centre there is nothing at which those two can meet.

I'''-I-vi) Version 2 space is closed. Therefore, the very centre of this space is described by a single straight line in such a way that it holds between two lines which face each

other from the two opposite sides of the centre, are fixed at the boundary, and are curved boundlessly toward the centreless centre (and therefore toward each other). A given straight line therefore, by itself, forms a hyperbola in and between which there exists the centreless centre. This hyperbola boundlessly approaches each other because the centre becomes denser and denser toward the very centreless centre. Two parallel straight lines are curved and coexist between the two outer-extremes of such a hyperbola without intersecting or meeting each other. The centreless centre exists between the two inner-extremes of this hyperbola. Between the outer- and inner-extremes there exist a boundless number of self-descriptions of this hyperbola. In this sense it is described that there are a boundless number of straight lines which are parallel to a given straight line through a given point.

I'"-II) Therefore, it is concluded that in Version 2 space there are a boundless number of straight lines which are 'parallel' to a given straight line through a given point. However, this does not constitute a proof ; for this is the description of a space, and not of a given straight line and a point.

II') Type I space and Version 1- and 2- spaces are not yet given, then :

II'-I) A straight line and a point can be given if and only if they themselves generate those spaces. This is so because there exists as yet no space into which they can be given.

II'-I-i) The notions of a straight line and a point are originated in Type II space. This means that Type II space must be first generated.

II'-I-ii) If anything is to generate its own space, then it is referring not to itself in the sense that it is so described and understood, but to what makes it possible for it to be so describable and understandable. Consequently, if a space is not yet given, then a straight line and a point are identical not with such themselves but with what makes them so exist.

II'-II) However, what makes a straight line and a point so describable and understandable, is already demonstrated. That is what conditionalizes itself as those spaces themselves.

II'-III) Therefore, the postulate of parallels is, if a space is not yet given, identical with the construction of a space itself. The postulate of parallels refers to the internal structure of a space. If the notions of a straight line and a point are presented in and with a space, then they embody the internal structure of that space. Their existence necessarily underlies that of a space. The proof of the postulate of parallels is simply the same as the demonstration of the construction of spaces.

2.2.3.2.8.3. The two types of 2-dimensional space are both conditionalized from the same 1-dimension. Therefore, they are 1-dimensionally identical. What is 1-dimensionally identical, is necessarily also identical in the 2-dimension. Such an identity based upon a descriptive necessity is a transcendental identity. Those two types of space are 2-dimensionally identical by transcendence. The outer-boundary of Type I space and the two determinant 1-dimensions of Type II space are descriptively identical by transcendence.

2.2.3.2.8.3.1. Version 1 and 2 spaces are commonly derived from Type I and II spaces. They are 'derived' in the sense that their existence is based upon a descriptive necessity such that requires Type I and II spaces to be 2-dimensionally one and the same if they do not hold. Such a descriptive necessity is, however, identical with a descriptive necessity which conditionalizes Type I and II spaces from the 1-dimension ; for the 2-dimensional difference between Type I and II spaces is descriptively necessary and is demonstrated. In this sense Version 1 and 2 spaces are fictitious because they have no descriptive necessity. They are generated on the

assumption that Type I and II spaces do not hold. They are, however, meaningful because they describe that the contrary to each of those two types of space leads both of those types of space to the formation of an identical space. Consequently, the existence of Version 1 and 2 spaces is based upon such meaningfulness. These common fictitious derivatives of Type I and II spaces, however, remain 2-dimensional because the contrary to each of Type I and II spaces can only be assumed from within those spaces. Therefore, the 1-dimensional identity between Type I and II spaces is 2-dimensionally seen in the existence of those common derivatives.

2.2.3.2.8.3.2. Those fictitious derivatives contain both notions of a straight line and a circle ; for they are generated from both Type I and II spaces and are common to them. They are 'self-contained' in the sense that they have no descriptive necessity. They therefore do not necessitate themselves any further conditionalizations.

2.2.3.2.8.3.3. The meaningfulness of those fictitious derivatives differs from a descriptive necessity which conditionalizes Type I and II spaces. A descriptive necessity is based upon another descriptive necessity and becomes a part of demonstration from within an existing demonstration. This meaningfulness is, however, not a constructive part of demonstration but simply the description of the validity of a descriptive necessity in terms of the impossibility of contradicting that descriptive necessity without losing its necessary descriptive outcome. That is, if it is descriptively necessary that the 2-dimensional transcendental difference between Type I and II spaces comes out of the same 1-dimension due to an innate necessity of the 1-dimension, then this difference necessarily disappears when those spaces contradict themselves from within themselves. This is so because by contradicting themselves those spaces are contradicting their own descriptive necessity and therefore lose their difference. This results in identical fictitious spaces which are commonly derived from mutually different Type I and II spaces.

2.2.3.2.8.3.4. Type I and II spaces necessarily describe each other. This is so because they are under the same 2-dimension and are therefore not only 1-dimensionally but also 2-dimensionally related to each other. There is no space other than those two types of space in the 2-dimension. Therefore, they can only be related to each other by describing each other. The mutual-description between two transcendentally different types of space is transcendental descriptions.

2.2.3.2.8.3.4.1. The description of Type I space in and by Type II space is a 'concentric circle'. A Euclidean concentric circle is made meaningful by this notion of a 'concentric circle'. This is so because the most basic relation between two points in Type II space is a 2-dimensional 1-dimension, which is a 'straight line' with an infinitesimal length. In Type II space a Euclidean concentric circle is described as the locus of points such that hold at an equal distance from a same point. A circle is not a polygon with an infinite number of edges. Therefore, this locus cannot consists in and of points which are spatially related to one another in terms of 2-dimensional 1-dimensions. The notion of π-constant stands for the descriptive incommensurability between a 'circle' and a 'straight line' and transcendentally relate them to each other by means of the necessity for each to be describable by the other. This is so because a 'circle' and a 'straight line' are both a straight line in their own space (i.e. respectively in Type I and II spaces) which are transcendentally related to each other. The notion of π-constant exists between those two types of space and therefore does not stand for a geometrical property. This means that it cannot be referred to by a number of any types (and therefore by any functional means). The notion of π-constant can only be numerically processed as an incommensurable relation between those two types of space and is therefore referred to by a process itself. Both Type I and II spaces have a common geometrical property which generates rational numbers. The numerical value of the notion of π-constant is a relation between two totalities of rational numbers within the totality of totalities of rational numbers in Type II space. Type I space

generates the recursive totality of totalities of rational numbers and is therefore incorporated in Type II space as a unit of totality of rational numbers. This unit necessarily corresponds to an equivalent unit within the totalities of such units in Type II space. A totality of rational numbers holds between two succeeding integral numbers. A circle and a 2-dimensional 1-dimension are both such a totality respectively by the meaning of Type I and II spaces. By this correspondence between a circle and a 2-dimensional 1-dimension a circle can determine, and be determined by, its diameter. Type I space is incorporated in Type II space and determines a 2-dimensional 1-dimension as its diameter by means of such mutual-determinability. The relation between these two totalities of rational numbers is the ratio of the circumference of a circle to its diameter and can be numerically processed because they are both within the totality of totalities of rational numbers as determined by means of the x-y coordinate. The incommensurability of such a ratio stands for the transcendental relation between those two types of space. This is the meaning of π-constant as a 'transcendental number'. The π-constant is, however, essentially a Euclidean number because it can only be processed in a Euclidean space. The notion of π-constant can only be processed as a Euclidean number because in Type I space the totality of totalities of rational numbers can only be described in terms of recursiveness and therefore cannot represent the ratio of two transcendentally related totalities of rational numbers. If the notion of π-constant can only be numerically evaluative in a Euclidean space, then the describability of the notion of a curve is numerically necessarily Euclidean. That is, every numerical representation is essentially Euclidean. This is the reason why a non- Euclidean geometry can only be, in so far as the description of a curve requires the π-constant, numerically represented by a Euclidean geometry. All those which requires this numerically processed notion of π-constant for its description, can only be described in a Euclidean space ; for the notion of π-constant can only be numerically processed in a Euclidean space.

2.2.3.2.8.3.4.1.1. Type I space can be incorporated in Type II space because the meaning of what constitutes its centre and outer-boundary is identifiable with that of what constitutes 2-dimensional points in Type II space. The substance of Type I space encloses that space, while the substance of Type II space fills that space. The two are, however, schematically identical.

2.2.3.2.8.3.4.2. The description of Type II space in and by Type I space is a 'closed line' and an 'open curve' as a segment of the former. This is so because in Type I space a straight line is necessarily two 'closed lines'. This means that in Type I space any two intersecting 1-dimensions necessarily form four 'closed lines' such that at least two of them intersect each other. These, however, cannot be numerically represented because the notion of π-constant can only be numerically processed in Type II space. In Type II space an 'open curve' is made possible because a same point can be shared by a straight line and a circle. That is, if a circle is intersected by a straight line, then two points of intersection which are shared by these circle and straight line, determines a set of two open curves as the segments of this intersected circle. The description of an open curve requires the π-constant because an open curve can only be a segment of a circle or a combination of such segments.

2.2.3.2.8.3.4.2.1. It is also for this reason that a curve and a circle necessarily share a segment which is more than a point. Curvature is a transcendental relation between Version 2 space and Type II space. Curvature also gives rise to another transcendental number *e* and intrinsically contains the notion of π-constant as Version 2 space is a derivative of Type I space. A fictitious line within Version 2 space transcendentally become an open curve in Type II space and generates *e*. In Version 2 space a straight line consists of points which become uniformly and boundlessly denser toward the centreless centre. This line becomes an open curve in Type II space which consists in and of points which are uniformly and infinitely dense. *e* is numerically processed as representing an open curve in

terms of such density on a numerical line.

2.2.3.2.8.3.4.2.1.1. Certain functions of 2-dimensional 1-dimensions, be it a circle or a curve, need numbers which are not in Type II space as neither a 'circle' nor a 'curve' exist in Type II space. A 'circle' originates in Type I space and a 'curve' is found in Version 2 space, while Version 1 space is the descriptive inverse of Type II space in the sense that every point in Type II space is fictionally described to form its own space and therefore represents schematic symmetry to the necessity for intersection. π, *e*, and *i* are found when Type I space, Version 2 space and Version 1 space are respectively incorporated in Type II space. The numerical relation among Type II space, Type I space, Version 1 space and Version 2 space is as follows ;

0 and 1 originate in Type II space and respectively represent the necessity for intersection and points,

π originates in Type I space and represents a closed curve (i.e. circle),

e originates in Version 2 space and represents an open curve,

i originates in Version 1 space and represents a schematic symmetry.

$e^{i\pi}+1=0$ numerically expresses the dimensional relation among Type II space, Type I space, Version 1 space and Version 2 space and the necessity for them to describe one another. That is, the descriptive necessity for the 1-dimension to progress into the 2-dimension unravels itself in Type II space by transcendentally incorporating Type I space, Version 1 space and Version 2 space. Type II space, by virtue of being essentially a coordinate and open, is numerically more descriptive in the sense that numbers are directional quantities by nature and a transpositional centre (0 as the centre and 1's as points) on the lattice of dynamic, uniform and infinite density gives rise to universality to any numerical descriptions.

2.2.3.2.8.3.4.2.1.2. An open curve given by Version 2 space in Type II space, can be described to be closed (Type I space) by virtue of schematic symmetry (Version 1 space), this is the meaning of $e^{i\pi}+1=0$. It is a numerical representation of transcendental relations, much as the logical dimensionalities are recursively expressed by (p, p, p→p).

2.2.3.2.8.3.4.3. The notion of π-constant is the bilateral form of mapping between Type I and II spaces ; for each type is necessitated to describe the other. The π-constant (i.e. the numerically processed notion of π-constant) is, however, only applicable to Type II space. This is so because (i) rational numbers are the highest type of numbers which is common to both types of space and contains the meanings of natural and integral numbers, (ii) therefore the relation between two totalities of rational numbers can only be described in terms of rational numbers, (iii) this can only be done in a space which can represent the totality of totalities of rational numbers. For this reason a non-Euclidean geometry cannot be purely non-Euclidean if it is to be numerically represented. The geometrical equality which holds between Euclidean and non-Euclidean spaces under the 2-dimension, loses its balance because of this necessity for the numerical inequality. This numerical inequality between Euclidean and non-Euclidean spaces lies in the descriptive necessity that the notion of π-constant can only be numerically processed in a Euclidean space. A Euclidean space therefore supplies a non-Euclidean space with a coordinate system and a set of functions which numerically determine the geometrical 'distortion' of non-Euclidean space against Euclidean space, in terms of the ratio of curvature.

2.2.3.2.8.3.5. Type I and II spaces are necessitated to describe each other so as to be the description of the 2-dimension. The description of each type therefore necessarily

assumes the other type in such a way that (i) they generate identical natural, integral and rational numbers, (ii) they mutually establish the notions of a straight line and a circle, (iii) the relation between these two notions in terms of numbers, makes Type II space the descriptive basis of the 2-dimension, (iv) on this descriptive basis those geometrical notions numerically manifest themselves and also numerically establish their derived notion of an open curve, (v) on this descriptive basis the notion of an open curve can numerically represent the curvature of a space, (vi) a Euclidean space contains the notion of an open curve internally, (vii) a non-Euclidean space contains the notion of an open curve externally as well as internally, (viii) the description of a non-Euclidean space is therefore a functional combination of at least two Euclidean spaces.

2.2.3.2.8.3.5.1. The description of the 2-dimension in Type I space on the above descriptive basis, is the 2-dimensional elliptic geometry. It is based upon a geometrical space which has a single centre and is closed in such a way that points become boundlessly denser in order to form the boundary of this space. Every parallel straight line in this space is described to meet at two identical points of the boundary. Such two points face each other across the centre of this space.

2.2.3.2.8.3.5.2. The description of the 2-dimension in Type II space on the same descriptive basis, is the Euclidean 2-dimensional geometry. It is based upon a geometrical space which has an infinite number of centres and is open, infinite and uniformly dense. There is one and only one straight line which is parallel to a given straight line through a given point.

2.2.3.2.8.3.5.3. The description of the 2-dimension in Version 2 space on the same descriptive basis, is the 2-dimensional hyperbolic geometry. No meaningful descriptions are possible within Version 1 space because it contains no points. This hyperbolic geometry is based upon a geometrical space which has a single centreless, central region and is closed in such a way that points become boundlessly denser toward the centreless centre and make this space identical with its own centre. Every parallel straight line in this space is described to exist as an indefinite number of hyperbolic lines which determine their own outer- and inner-extremes by indefinitely approaching each other and exist between them. This means that there are an indefinite number of straight lines which are described to be parallel to a given straight line through a given point.

2.2.3.2.8.3.6. The description of the 2-dimension is therefore based upon the transcendental relation between Type I and II spaces and their necessity to describe each other and is presented as the above three types of 2-dimensional geometry. That is, while the 2-dimension necessitates Type I and II spaces to relate to each other, the description of the 2-dimension results in three types of description. These three types of description of the 2-dimension are related to one another in such a way that each of them embodies that transcendental relation and stands for the 2-dimension and therefore implicitly assumes among them a space which is not 2-dimensional. This is so because the necessity for Type I and II spaces to relate to each other so as to stand for the 2-dimension, is what makes the 2-dimension descriptively representable and therefore cannot be itself presented in the 2-dimension which is now described in each of Type I and II spaces and their common derivative. Consequently, while the transcendental relation between Type I and II spaces is innate to the 1-dimension and is descriptively purely 2-dimensional, this implicitly assumed and descriptively necessary relation among three types of the 2-dimension is innate to the 2-dimension and is not descriptively 2-dimensional.

2.2.3.2.8.3.6.1. Type I space provides Type II space with the notion of a circle and makes it possible for Type II space to derive the notion of an open curve. Type II space provides Type I space with the notion of a straight line and makes it possible for Type I space to derive the notion of an open curve. Each complements the other and makes it possible for both to stand for the 2-dimension. Between such two

there exists a space which is not 2-dimensional ; for the 2-dimension can only be in each of those mutually complemented Type I and II spaces.

2.2.3.2.8.3.6.2. Version 1 and 2 spaces can be derived necessarily commonly from Type I and II spaces. That is, if they can be derived from either of Type I and II spaces, then they can also be derived from the other. Consequently, they contain that necessity of Type I and II spaces' describing each other. They, however, do not represent that space which is not 2-dimensional but 2-dimensionally necessary. This is so because they are based upon what is contrary to the necessary characteristics of each of Type I and II spaces.

2.2.3.2.8.3.7. A further dimension is conditionalized by the necessity to describe this space which is not 2-dimensional but 2-dimensionally necessary. Version 1 and 2 spaces remain fictitious and 2-dimensional. The 3-dimensional description of these common derivatives is not purely geometrical but algebraic. This is so because the above mentioned space exists between mutually complemented Type I and II spaces, and not in those common derivatives. Those common derivatives therefore do not have any descriptive necessity to conditionalize a further dimension from them. They can only be algebraically manipulated ; for the 2-dimensional hyperbolic geometry is descriptively based upon a functional combination of at least two Euclidean coordinates such that determine a curvature. It can therefore manipulate itself purely algebraically and make itself 3-dimensional with or without a geometrical necessity. This also means that the 3-dimensional hyperbolic geometry does not have any geometrical reality and remains fictitious.

2.2.3.2.8.3.7.1. Only geometrical dimensions are descriptively vertical. Algebraic ones are descriptively parallel to the geometrical 2-dimension. This is so because two sequences of numbers are made possible to spatially intersect each other and to descriptively identify each with the other, by Type II space. Once given the meaning of the intersection of sequences of numbers, it applies to the intersection of any number of sequences of numbers ; for it is described in Type II space that a point of intersection is determinable by at least two intersecting 1-dimensions. This means that once a point of intersection is determined, it can be intersected by any number of 1-dimensions. A sequence of numbers is embodied by a 1-dimension. An algebraic dimension therefore only refers to the number of intersecting sequences of real numbers and retains all the geometrical characteristics of Type II space. Algebraic dimensions can be therefore extended to n. Geometrical dimensions are conditionalized by descriptive necessities and become a physical dimension.

3. 3-Dimension : Type I and II spaces relate to each other in order to describe the 2-dimension. They are required to be so related by their own describability ; for they are 2-dimensionally simultaneous and coexistent. This describability is therefore an identical dimensionality of Type I and II spaces. That is, what descriptively applies the 1-dimension in order to make it fully self-descriptive, applies in such a way that it results in an identical dimensionality of the outcome of such a self-descriptiveness. An identical dimensionality of two spaces, however, assumes a space in which this identical dimensionality holds between those two spaces. Such a space is the descriptive space of that dimensionality. The 2-dimension holds in each of Type I and II spaces, while the 2-dimensionality holds between them. The 2-dimensionality is therefore identical with what necessitates Type I and II spaces to relate to each other and consequently cannot be seen in the 2-dimension. The 2-dimensionality differs from the 2-dimension because if it is in the 2-dimension, and therefore if it is in each of mutually complemented Type I and II spaces, then it cannot be described that Type I and II spaces share an identical dimensionality. This is so because those mutually complemented Type I and II spaces are internally self-sufficient and are therefore 2-dimensionally independent from each other. The dimensionality of a dimension cannot be described within that dimension unless that dimension consists in one and only one independent constituent. Otherwise, the dimensionality of a dimension can only be something which exists beyond that dimension and makes it see itself. The 2-dimensionality therefore cannot be described in the 2-dimension. It exists in a space which

holds between those mutually complemented Type I and II spaces and makes them see their own dimensionality. Such a space is the 3-dimension. It is the descriptive space of the 2-dimensionality.

3.1. The 2-dimensionality necessitates Type I and II spaces to relate to each other so as to show that they share a same dimensionality. In the 3-dimension this dimensionality is therefore descriptively seen as the relation between two sets of description of the 2-dimension (i.e. between mutually complemented Type I and II spaces). Type I and II spaces are made possible to relate to each other by their transcendental relation. They are necessitated to relate to each other by their dimensionality. This transcendental relation is innate to Type I and II spaces and is therefore manifested in each of mutually complemented Type I and II spaces. What necessitates Type I and II spaces to relate to each other, is external to them and therefore cannot be manifested in them. The dimensionality of mutually complemented Type I and II spaces can only be described as what externally determines them. Type I and II spaces are both under the 2-dimension because they are internally identical and externally coexistent. That is, what is internally identical and externally coexistent has a necessity to relate to each other. Consequently, the dimensionality of a dimension which has two independent constituents, is identical with what externally determines such a necessity.

3.1.1. $\{\overleftarrow{\Rightarrow}\mathrm{v}\overrightarrow{\leftarrow},\overleftarrow{\Rightarrow}\Lambda\overrightarrow{\leftarrow}\}$ is the description of what is internally identical and externally coexistent (i.e. $\overleftarrow{\Rightarrow}$ and $\overrightarrow{\leftarrow}$) and forms the 2-dimension. v and Λ have a necessity to have an identical meaning when they hold in and between what is internally identical and externally coexistent. This necessity is an identical dimensionality of Type I and II spaces. What externally determines this necessity is the ontologico-notational meaning of v and Λ. v and Λ have an identical meaning between two same variable-notions because neither of them has an ontologico-notational necessity to hold between two same variable-notions. v and Λ exist in order to describe the meaning of the 0-dimensionality in terms of two differentiative variable-notions. v operates two differentiative variable-notions and describes the 0-dimensionality of what is internally identical. Λ operates two differentiative variable-notions and describes the 0-dimensionality of what is externally coexistent. However, the latter is based upon the former because it is descriptively necessary that nothing can be externally coexistent unless it is internally identical, and that the reverse does not hold. This is demonstrated in the logical space. What externally determines v and Λ to have an identical meaning between two same variable-notions, is therefore their ontologico-notational necessity to hold only between two differentiative variable-notions and to describe the meaning of the 0-dimensionality. This results in v's being more fundamental than Λ ; for what is externally coexistent can only be generated by the 0-dimensionality of what is internally identical. Two differentiative variable-notions make it possible to describe what is internally identical and externally coexistent, while two same variable-notions embody it in their existence. Consequently, v and Λ are equally meaningful and applicable whether they hold between two differentiative variable-notions or two same variable-notions. The description of the former, however, gives rise to the meaning of the description of the latter. The meaning of v and Λ's having an identical meaning between two same variable-notions is therefore described by their relation which holds when they hold between two differentiative variable-notions. This relation is that v is more fundamental than Λ in the sense that it holds without Λ, but not the other way around.

3.2. Type I and II spaces are necessitated to relate to each other in order to show their identical dimensionality and results in two sets of description of the 2-dimension. Their identical dimensionality is therefore seen in the relation between these two sets of description of the 2-dimension. One set is the description of the 2-dimension in Type I space in its relation to Type II space, and the other is the description of the 2-dimension in Type II space in its relation to Type I space. The former is based upon the meaning of v, and the latter, upon that of Λ. v and Λ have an identical meaning between identical two same variable-notions because v is more fundamental than Λ when they hold between identical two differentiative variable-notions ; for Λ only exists in order to confirm the meaning of v. That is, v and Λ have an identical meaning between identical two same variable-notions because Λ need not confirm the meaning of v between two same variable-notions and therefore becomes identical with v. v need not hold between two same variable-notions because two same variable-notions are

identical with a single variable-notion, whose meaning embodies that of v in terms of its truth-values. The 2-dimension in Type I space is therefore 3-dimensionally more fundamental than that in Type II space ; for v is more fundamental than ∧. This means that the 2-dimensionality is seen between those two sets of description of the 2-dimension in such a way that the 2-dimension in Type I space is more fundamental than that in Type II space. This is the meaning of the 3-dimension.

3.2.1. The above relation between two sets of description of the 2-dimension does not appear in the 2-dimension. This is so because the 2-dimension is the description of what is internally identical and externally coexistent and therefore cannot be the description of such a description. The 3-dimension is the description of such 2-dimension.

3.2.2. The ∧-operator is conditionalized in order to schematically confirm a v-operation. Consequently, whatever may be ∧-operated, it is operated as the schematic confirmation of the meaning of what is v-operative. Whatever that is v-operative, is 0-dimensional and is therefore 0-dimensionally twofold. What is 0-dimensionally twofold, is schematically confirmed to be 0-dimensionally identical. v is more fundamental than ∧ because ∧ is the necessary description of a meaning which is contained in the meaning of v.

3.2.2.1. The 2-dimensionality is descriptively seen as the relation between two sets of description of the 2-dimension. By this relation what is 2-dimensionally equal is 3-dimensionally related to each other in such a way that one is more fundamental than the other. The relation between the 2-dimension and the 3-dimension is that while the latter makes the former describable, the former makes the latter descriptively visible.

3.2.3. If a set of descriptions is more fundamental than another set of descriptions of a same dimension, then the latter set is necessarily reducible into the former set. The 3-dimension is identical with a set of 2-dimensional descriptions in Type I space and is also necessarily a descriptive space into which the other set of descriptions based upon Type II space is reducible.

3.2.3.1. These two sets of descriptions of the 2-dimension are descriptive structures which consist in and of a single identical schema ; for v and ∧ hold identically in and between an identical schema. Consequently, one set is more fundamental than the other not because the latter is a part of the former, but because a one-one correspondence holds between them in such a way that it is made describable in terms of the structure of the former. That is, this one-one correspondence holds unilaterally from the former to the latter. A description in a 2-dimensional space is a 1-dimensional relation between two points or a combination of such relations. The former is a basic description, while the latter is a compound description. Consequently, the 2-dimensionality conditionalizes a one-one correspondence between mutually complemented Type I and II spaces in such a way that descriptions in the complemented Type I space make such a one-one correspondence describable. This means that the complemented Type I space must be conditionalized in such a way that it can make this one-one correspondence describable. The complemented Type II space remains same.

3.2.3.1.1. In the complemented Type I space the 2-dimension is described to consist in a space which is finite, closed and becomes boundlessly denser in order to form a boundary. This space consists of a circle as its boundary. Within this boundary it consists of closed lines which can be described as ellipses. Every ellipse has one and only one tangent with the boundary and consists of points which are descriptive entities of the boundary.

3.2.3.1.2. In the complemented Type II space the 2-dimension is described to consist in a space which is infinite, open and uniform. This space consists of intersecting 2-dimensional directions and circles. Such intersections give rise to segmentations. By segmentations there descriptively exist finite straight lines and open curves. The former is segments of 2-dimensional directions and consists of at least a 2-dimensional 1-dimension. The latter is segments of circles, consists of at least a 2-dimensional 1-dimension, and is described with the notion of π-constant. These are the substances of the 2-dimension in Type II

space. Segmentations and combinations are described in terms of points which are shared by such substances. They determine each other in such a way that whatever that can be segmented, can be combined, and vice versa. By segmentations and combinations every Euclidean 2-dimensional figure can be described in terms of 2-dimensional 1-dimensions and the notion of π-constant. This means that in Type II space every substance can be differentiated into a functional combination of 2-dimensional 1-dimensions.

3.2.3.2. The finiteness of Type I space is obtained by its boundlessly dense, closed boundary. This boundary consists of a boundless number of 2-dimensional points. Points within this boundary are descriptive entities which exist in order to describe such a boundary. A one-one correspondence therefore holds between the constituents of the boundary of Type I space and the centres in Type II space in such a way that the 1-dimensional relation between any two centres in the latter space can also be described between two constituents of the former space. This means that the former space must be conditionalized in such a way that any descriptions in the latter space also hold in the former space by a one-one correspondence.

3.2.3.2.1. Every description in the complemented Type II space is a 1-dimensional relation between two centres or a 1-dimensional or 2-dimensional combination of such relations. The complemented Type I space consists of a single description which holds among all its 2-dimensional points. This is the boundary of that space. This is so because in Type I space every 2-dimensional point 1-dimensionally relates to one another and forms the closed line of the boundary. A one-one correspondence holds between those mutually complemented Type I and II spaces in such a way that every description in Type II space is reducible into one in Type I space. Consequently, it is necessary that the complemented Type I space is conditionalized so that its 2-dimensional points relate to one another in such a way that not only 1-dimensional relations and their 1-dimensional combinations but also 2-dimensional combinations can be described.

3.2.3.2.2. 2-dimensional combinations of 1-dimensional relations cannot be reduced into 1-dimensional relations or 1-dimensional combinations of such relations ; for the relation between the 1-dimension and the 2-dimension is descriptively irreversible. A dimension cannot be described in one which is lower than itself. It can only be conditionalized. If any 2-dimensional substances can be 1-dimensionally described, then there is no necessity for the existence of the 2-dimension. A conditionalization always and necessarily proceeds unilaterally.

3.2.3.2.2.1. Type II space is numerically representable necessarily by two identical sequences of numbers, while a single recursive sequence can numerically represent Type I space. Not every description by two sequences of numbers can be reduced into one by a single sequence of numbers. This is so because what can be described by a single sequence of numbers does not give rise to a necessity for two sequences of numbers.

3.2.3.2.3. Numbers are the only way of describing geometrical properties. This is so because the totality of a type of numbers is the self-description of a geometrical property. Consequently, it is necessary that Type I space is conditionalized into a space in which a single recursive sequence of numbers can represent two non-recursive correlated sequences of numbers.

3.2.3.3. Whatever that exists in Type II space can be determined and described by two determinant intersecting 1-dimensions (i.e. the x-y axes). In Type II space every 2-dimensional point can be a centre, and any one, but one and only one, centre can be described as a centre. The centre of Type II space is a centre which is described as a centre. Consequently, the two determinant intersecting 1-dimensions of such a centre can also be described to determine Type II space itself. Type II space is infinite, open and uniformly dense. The two determinant intersecting 1-dimensions of Type II space therefore necessarily comply with those innate characteristics of Type II space. The x-y axes consequently extend into infinity and are related to one another in terms of symmetry. In contrast to such x-y axes Type I space consists in and of a single closed 1-dimensional relation which holds among

all its 2-dimensional points. In Type I space all of a boundless number of 2-dimensional points are correlated with one another in such a way that two 1-dimensional directions can be determined at any one of them from the centre of that space. Type I space therefore consists in and of a boundary which is uniformly, boundlessly dense, finite and closed. In Type I space this closed 1-dimensional relation among its all 2-dimensional points is an internal relation and is determined by those points themselves. This contrasts with Type II space in which every 2-dimensional point is determined not by itself but by the x-y axes. That is, 2-dimensional points are internally related to one another in Type I space, while they are externally related to one another in Type II space. Therefore, neither class of 2-dimensional points has any 2-dimensional relation to the other. A one-one correspondence consequently cannot be found as a 2-dimensional relation between those two classes of 2-dimensional points.

3.2.3.3.1. Whatever that can be described in the complemented Type II space must also be describable in the complemented Type I space. This is possible if and only if there is a one-one correspondence between those two types of space. Such one-one correspondence is a descriptive necessity. The 3-dimension is conditionalized by this descriptive necessity. A closed line can have a one-one correspondence to the x-y axes if and only if it is conditionalized to have an identical self in such a way that ;

(i) this identical self determines the same space that is determined by that closed line,

(ii) this identical self is symmetrically related to that closed line.

This is the ‘self-differentiation’ of Type I space and gives rise to the 3-dimension. A closed line need to have an identical self because the x-y axes have a necessity to consist in and of two identical selves of a straight line, and because this necessity would not exist if everything in Type II space could be determined and described by a single straight line. Each of the x-y axes has its own one-one correspondence to a same closed line. The reverse does not hold because unless a point is made to differentiate itself from itself, it remains a single point and therefore cannot have two identical references without contradicting the initial condition. Such self-differentiated points constitute a line. The identical self of a closed line need not share the same space as that of this closed line ; for a self-identity is a unilateral relation from something to its self. Consequently, two selves exist neither under a same space nor in two different spaces. The identical self of a closed line determines the same space that is determined by this closed line in such a way that there is a relation in and between this same space. The identical self of a closed line cannot be described if it remains spatially identical with this closed line. An identical space can differentiate itself from itself if and only if it has a one-one correspondence to itself. This is the meaning of a self-differentiation. The 3-dimension is therefore a one-one correspondence in and between an identical Type I space and necessarily enables itself to have a one-one correspondence to Type II space. The identical self of Type I space relates to this Type I space symmetrically ; for the uniform density of the boundary of Type I space is innate to Type I space. This means that a one-one correspondence in and between an identical Type I space determines a space such that its boundary is also uniformly dense and contains those of Type I space and its identical space. A Type I space relates to its identical self symmetrically because it descriptively reflects its own innate characteristic of uniform density. Such symmetry and uniform density determine the 3-dimension as a single ‘sphere’. A ‘sphere’ is the uniform self-differentiation of Type I space in terms of a one-one correspondence in and between this Type I space. The 3-dimension is therefore descriptively determined by two symmetrically intersecting Type I spaces. Four symmetrically related semi-circles (i.e. the boundaries of Type I space and its identical self) correspond to the x-y axes and establish a one-one correspondence between them. This is possible because both the boundary of Type I space and the x-y axes consists of an infinite number of points. Therefore, whatever that can be described in a x-y coordinate, can also be described by this self-differentiated Type I space.

3.2.3.3.2. The centre of Type II space is, once given, transpositional to any 2-dimensional points ;

for any 2-dimensional points could have been the centre. Such transpositions only take place in a given x-y coordinate. A x-y coordinate stands for the meaning of Type II space and therefore for the schematic identity of every Euclidean 2-dimensional coordinate. The self-differentiated Type I space consists in and of the same inner-boundary as that of Type I space and an outer-boundary such that is finite but boundless, closed, uniformly dense and curved. This outer-boundary differs from that of Type I space in the sense that it consists of a boundless number of self-differentiatively intersecting Type I space. This is so because the outer-boundary of Type I space is uniformly dense and curved, and therefore because any two opposing points can be points of intersection and boundlessly multiplies themselves. Consequently, any points of intersection can be the centre of this boundlessly self-differentiated Type I space. Such a centre is also transpositional to any points of intersection. Such transpositions only take place in a given spherical x-y coordinate. Such a coordinate stands for the meaning of self-differentiated Type I space and therefore for the schematic identity of every self-differentiated Type I space. Consequently, these two coordinate systems allow themselves free transpositions of a centre necessarily within themselves and independently from each other.

3.2.3.3.3. Whatever that can be described in a given x-y coordinate, can also be described in a given spherical x-y coordinate ; for these two sets of x-y axis have a one-one correspondence between them. The 3-dimension is identical with this spherical x-y coordinate. A spherical x-y coordinate is self-relationally symmetrical and therefore corresponds to the spatial uniformity of a x-y coordinate.

3.2.3.3.3.1. The self-relation of a 2-dimensional space cannot be 2-dimensional ; for the totality of a space cannot be described within that space. A space can only relates to itself in such a way that it holds a one-one correspondence to itself. Such a one-one correspondence is the description of a space by that space itself. A space describes itself by the transpositions of a centre. A centre is transpositional if and only if a space is descriptively recursive. Type II space is recursive only in the sense that any centres could have been the centre. It, however, does not have a necessity of its own to describe itself ; for one and only one centre can describe itself as a centre and becomes the centre. The transpositions of a centre is therefore merely the loci of the centre in its absolute relation to such an itself. Type I space is recursive in the sense that from the centre of this space an identical set of two 1-dimensional directions can be determined at any 2-dimensional points. This is so because the outer-boundary of Type I space consists of 2-dimensional points, but is not reducible into parts. This means that every 2-dimensional point is every other 2-dimensional point and is therefore recursive in its relative relation to itself. If such 2-dimensional points hold a one-one correspondence to themselves, then they determine a space in which every one of them is a centre. This is so because such a one-one correspondence determines at every 2-dimensional point as many identical sets of two 1-dimensional directions as there are constituents in that outer-boundary. This results in a space in which a boundless number of Type I spaces share a same centre, intersect one another and therefore multiplies themselves. The outer-boundary of this space consists of a boundless number of self-multiplying points of intersection. Every one of these points can be a centre of this outer-boundary because they determine one another. If one of such centres is described as a centre and becomes the centre, it forms a spherical x-y coordinate, in which this centre is only transpositional in its absolute relation to such an itself. Such a spherical x-y coordinate is the meaning of the 3-dimension.

3.2.3.3.3.1.1. The boundless number of 3-dimensional points correspond to the infinite number of 2-dimensional points in Type II space by the dynamism of both spaces.

3.2.3.3.3.2. Type I space has no spatially real entities within its boundary. This is so because it is a space such that its centre can determine an identical set of two 1-dimensional directions at any parts of that space. The 3-dimension is the self-description of such a space and therefore also does not have any spatially real entities within its boundary. If Type I space had spatially real entities, it would describe itself in terms of those entities and therefore would result in a set of 2-dimensional descriptions such that

differ from one another ; for every spatially real entity has an absolute position in a finite space and therefore makes that space appear different from one entity to another. The 3-dimension has descriptive entities within its boundary in the same sense that Type I space has. Such entities exist in order to describe the outer-boundary in terms of the inner-boundary and become uniformly and boundlessly denser from the inner-boundary toward the outer-boundary.

3.2.3.3.3.2.1. The 3-dimension is the space of Type I spaces. Type I space can be described identically at its every 2-dimensional point. By a one-one correspondence which Type I space holds to itself, at every 2-dimensional point there are a boundless number of spaces which are descriptively identical with Type I space and share the same centre as that of a given Type I space. Every Type I space therefore intersects every other Type I space and therefore boundlessly multiplies points of intersection (i.e. self-differentiated 2-dimensional points). This means that the 3-dimension is externally bound by a boundless number of Type I space and therefore by a boundless number of points of intersection. These points are boundlessly and uniformly dense and externally cover the 3-dimension. They are transpositional because any points can be a centre in the sense that they are all descriptively identical with one another and determine one another. A centre is the centre and forms a spherical x-y coordinate if and only if it is described as a centre. This coordinate is the meaning of the 3-dimension.

3.2.3.3.3.2.1.1. The 3-dimension can describe whatever that can be described in the complemented Type II space. It consists in and of an inner-boundary and an outer-boundary. This inner-boundary is the internal centre of this space and can determine an identical set of a boundless number of sets of two 1-dimensional directions at any points of the outer-boundary. Between this inner-boundary and the outer-boundary there exists a descriptive space in which descriptive entities relate the inner- and outer-boundaries by becoming uniformly and boundlessly denser from the inner-boundary toward the outer-boundary. The outer-boundary consists of points which are descriptively identical with 2-dimensional points, are boundlessly and uniformly dense, and have no spatial size. They are described not to have any spatial size because they do not occupy any portion of space. This outer-boundary is also not reducible into parts because it is the self-differentiation of the outer-boundary of a given Type I space. Points of this outer-boundary have a one-one correspondence to those of Type II space. This is so because (i) they are descriptively identical with 2-dimensional points of Type I space, (ii) there are a boundless number of them, (iii) they are uniformly and boundlessly dense, (iv) they are transpositional, and (v) they form a spherical coordinate, which 2-dimensionally corresponds to the Euclidean 2-dimensional coordinate. Points of this outer-boundary have no spatial size, while those in Type II space have an infinitesimal size. This, however, does not prevent a one-one correspondence between them ; for a ‘point with no spatial size’ only means that its size cannot be spatially described because there is no space among or outside those points. This outer-boundary of the 3-dimension can not only represent any descriptions in the complemented Type II space but also ‘mirrors’ them all onto it ; for it consists of a boundless number of uniform faces. A point is infinitesimal in a infinite, open and dynamic space, while the same point is spatially sizeless in a closed space.

3.2.3.3.3.2.1.1.1. The 3-dimension is a finite, boundless ‘sphere’ and is the descriptive space of the 2-dimensionality. This ‘sphere’ has a solid surface and a hollow inside. It is hollow because it contains no spatially real entities. Its surface is solid because it is the self-relation of the outer-boundary of Type I space. That is, it consists of points which are so dense that they cannot be reduced into parts. Those points are transpositional because any one of them can be a centre. This surface therefore forms a spherical x-y coordinate and has a one-one correspondence to the Euclidean 2-dimensional x-y coordinate.

3.2.3.3.3.2.1.1.2. A space cannot relate to itself by holding a one-one correspondence to itself if it

has a centre which is spatially real and transpositional. This is so because such a centre gives rise to an absolute coordinate within that space and therefore prevents that space from holding a one-one correspondence to itself. In such a space a one-one correspondence holds not to that space itself but to its substances. A space therefore cannot contain any spatially real entities if it is to hold a one-one correspondence to itself. Such a space is also necessarily finite. The surface of the 3-dimension consists of points such that every one of them can be a centre and is spatially real. Any one, but one and only one, of such centres, can describe itself as a centre and becomes the centre. This centre is transpositional because any centres could have been the centre. This centre therefore gives rise to a spherical x-y coordinate. This also means that the 3-dimension cannot relate to itself by holding a one-one correspondence to itself.

3.2.3.3.4. The 3-dimension is itself neither Euclidean nor non-Euclidean. It is merely a space-entity (i.e. the space of empty, closed spaces). It is the description of this 3-dimension that is Euclidean or non-Euclidean. The 3-dimension holds a one-one correspondence to the complemented Type II space. Once given such a one-one correspondence, it descriptively holds twofold ; it, on one hand, enables the complemented Type II space to describe the 3-dimension, on the other, it enables the 3-dimension to describe the complemented Type II space. These two descriptions are, however, constrained by the necessity that a coordinate can only be numerically Euclidean. This is so because irrational numbers can only be given in Type II space. That is, only Type II space can generate a sequence of real numbers. This descriptively determines the way by which the 3-dimension describes the complemented Type II space. A spherical x-y coordinate can only be numerically processed by a Euclidean 2-dimensional x-y coordinate. The description of the complemented Type II space by this numerically processed spherical x-y coordinate is identical with the 2-dimensional elliptic geometry.

3.2.3.3.4.1. The description of the 3-dimension by the complemented Type II space is as follows :

(i) A one-one correspondence between them means that they descriptively coincide with each other. That is, the 3-dimension, by itself, represents the entire complemented Type II space, and vice versa. This one-one correspondence is therefore twofold in the sense that, on one hand, the 3-dimension can ‘paraphrase’ itself into the complemented Type II space and, on the other, the complemented Type II space can ‘synthesize’ itself into the 3-dimension. Therefore, this one-one correspondence is itself a space which holds between them and relate them together.

(ii) The 3-dimension can describe the complemented Type II space if and only if it is numerically processed. This means that a space in which a one-one correspondence holds between them is itself Euclidean ; for only Type II space can generate a sequence of real numbers. The 3-dimension cannot be in the complemented Type II space because of one-one correspondence between them. The 3-dimension and the complemented Type II space can exist in a space and hold a one-one correspondence between them if and only if the 3-dimension ‘paraphrases’ itself into the complemented Type II space. This results in the existence of two Euclidean 2-dimensional x-y coordinate. Such two coordinates are related to each other in terms of a one-one correspondence as well as their identical and common characteristics. They are both infinite, uniformly dense, spatially symmetrical and internally freely transpositional. Consequently, a one-one correspondence between them determines a space which complies with, and retains, those identical and common characteristics between them. This one-one correspondence has no descriptive necessity to specifies a distance between them. This means that a space between them can have a width of anything between the length of a 2-dimensional 1-dimension and that of a 2-dimensional direction (i.e. between infinitesimal and infinity). This is the Euclidean 3-dimensional space and is the space of an infinite number of Type II spaces.

(iii) This space can be determined by three axes. This is so because a one-one

correspondence between the centres of two x-y coordinates can spatially extend into infinity and becomes the z-axis. Everything in this space can be determined by those three axes. This space is identical with the algebraic 3-dimension and therefore holds with or without a geometrical necessity.

(iv) Given this Euclidean 3-dimension space, the 3-dimension (i.e. the 3-dimension itself) is identical with a locus of points which holds at a certain line segment from a certain point ; for it can only be the self-description of a Euclidean circle. A spherical x-y coordinate can be numerically determined in accordance with its curvature against this Euclidean 3-dimensional coordinate and based upon the numerically processed notion of π-constant. Every point in this space is also transpositional because a one-one correspondence holds in such a way as to retain every characteristic of Type II space.

(v) This space can be described by three sequences of real numbers which are symmetrically related to one another in order to comply with the uniform density of this space. This space consists of an infinite number of points which are uniformly dense and can be represented by a set of three real numbers. Those points can describe any Euclidean 3-dimensional solids in the same way by which 2-dimensional points describe any Euclidean 2-dimensional figures.

(vi) The descriptive necessity for this space is the numerical evaluativity of a spherical x-y coordinate and is therefore not directly geometrical ; for any numerical treatments can only be an algebraic application of the geometrical 2-dimension. This Euclidean 3-dimensional space therefore has no geometrical reality. The 3-dimension itself can be differentiated from the 3-dimension if and only if the 3-dimension remains purely geometrical and retains its one-one correspondence to the complemented Type II space purely as its internal structure.

3.2.3.3.4.2. The description of the complemented Type II space by the 3-dimension is as follows :

(i) Once the 3-dimension is identified with a Euclidean sphere, it becomes a spherical x-y coordinate with a Euclidean curvature. Every description in the complemented Type II space can be mapped onto this 3-dimension by a one-one correspondence between them and based upon this curvature. This is so because this curvature is a form of mapping between them and makes it possible to translate a relation between any two points in the complemented Type II space into one between two points in the 3-dimension.

(ii) The description of the complemented Type II space by this 3-dimension is identical with the 2-dimensional elliptic geometry. This is so because a non-Euclidean space can only be described by a Euclidean reference system. A Euclidean reference system is a function of at least two Euclidean x-y coordinates and determines a curvature. It is therefore algebraically 3-dimensional.

3.2.3.3.4.3. The Euclidean 3-dimensional space is a relation between two Euclidean 2-dimensional spaces. The Euclidean 2-dimensional space is a space which is open, infinitely expanding and uniformly dense. Consequently, neither of them can accommodate the other within itself and therefore can only relate to the other externally. This external relation holds between those two 2-dimensional spaces in terms of a one-one correspondence. This one-one correspondence does not specify any distance between those 2-dimensional spaces and therefore can be externally anything between infinitesimal and infinity. This is so because a 2-dimensional 1-dimension determines the minimum distance known to those 2-dimensional spaces, while 2-dimensional direction determines the maximum distance. Those two 2-dimensional spaces can externally relate to each other in terms of a one-one correspondence if and only if this one-one correspondence complies with the characteristics of those spaces. The characteristics of those spaces are determined by the ways by which points relate to one another. This means that a one-one correspondence holds between points of those

spaces. Therefore, there exists an infinite number of those spaces which are internally related to one another by such a one-one correspondence and spatially related to one another by the continuous variation of distance ranging from infinitesimal to infinity. This space is therefore open, infinite and uniformly dense. It consists of points which are transpositional not only horizontally but also vertically ; for any two of those spaces are internally related to each other by a one-one correspondence. Any points can be a centre. The description of a centre as a centre yields the centre and gives rise to a Euclidean 3-dimensional coordinate. This coordinate has the z-axis in addition to the x-y axes. This z-axis stands for the continuous variation of distance between two Euclidean x-y coordinates and has the same scale as the x-y axes. This is so because this variation of distance is identical with that of a Euclidean x-y coordinate. Once given this x-y-z axes, it determines x-y coordinates in their infinite continuous variation of distance to one another. In this infinite variation the z-axis retain an identical centre because of their one-one correspondence and the transpositionability of their substances. Therefore, the z-axis holds between the centres of two x-y coordinates whose distance to each other varies infinitely and continuously, and determines such distances. This means that every point in this space can be determined by this x-y-z axes. That is, this x-y-z axes can describe any figures and solids in this space. A figure is a horizontal relation among points, while a solid is a vertical relation of figures.

3.2.3.3.4.3.1. The 3-dimension onto which descriptions in the complemented Type II space can be projected by a one-one correspondence, is necessarily one which can be described as a sphere in the Euclidean 3-dimensional space and is therefore not the 3-dimension itself. This is so because descriptions in the complemented Type II space can only be mapped onto a numerically processed spherical x-y coordinate. Consequently, the 3-dimension is required to be in the Euclidean 3-dimensional coordinate by an algebraic necessity. The necessity is not 3-dimensionally geometrical because it is based upon a 2-dimensional geometrical necessity. The 3-dimension itself differs from the 3-dimension in the sense that the 3-dimension geometrically only need to be a ‘sphere’, while it is algebraically required to be a sphere. A ‘sphere’ is internally capable of describing whatever that can be described in the complemented Type II space, while a sphere is the external manifestation of such a ‘sphere’. The Euclidean 3-dimensional space and the 2-dimensional elliptic space are the ways by which a ‘sphere’ externally manifests itself based upon its algebraic necessity. If a ‘sphere’ externally manifests itself based upon its purely geometrical necessity, then it conditionalizes the 4-dimension.

3.2.3.3.4.3.1.1. The 3-dimension holds a one-one correspondence to the complemented Type II space in such a way that ;

(i) it ‘paraphrases’ itself into a complemented Type II space,

(ii) it conditionalizes the Euclidean 3-dimensional space between such an itself and the complemented Type II space,

(iii) it identifies itself with a sphere in that space,

(iv) and projects the complemented Type II space onto it by a one-one correspondence.

This ‘paraphrasing’ takes place because the 3-dimension has an algebraic necessity to numerically process itself as a spherical coordinate. The reverse does not hold because a sequence of real numbers can only be Euclidean. If the complemented Type II space ‘synthesizes’ itself into the 3-dimension, then there can be no numerical ways by which descriptions in the complemented Type II space can be mapped onto the 3-dimension. No relations between two 3-dimensions themselves can be put into numerical descriptions. No two 3-dimensions themselves can relate to each other because a 3-dimension itself is the self-description of Type I space.

Two identical self-descriptions cannot relate to each other because nothing has a necessity to describe itself identically twice. The option for the reverse therefore contradicts the initial condition.

3.2.3.3.4.3.1.1.1. The description of a point can only be a number. This is so because the meaning of a number is identical with that of a point and refers to its own meaninglessness without a totality which is based upon a geometrical property.

3.2.3.3.4.3.1.1.2. Descriptions on the 3-dimension can be mapped onto the complemented Type II space if and only if those in the complemented Type II space are already mapped onto the 3-dimension. This is so because the 3-dimension has no descriptions by itself.

3.2.3.3.4.3.2. The 3-dimensional elliptic space can be obtained by Euclidean spheres. In the Euclidean 3-dimensional space a sphere can be described to infinitely and continuously vary in size. The 3-dimensional elliptic space can be obtained by translating various continuous sizes into various continuous degrees of density. This results in a single spherical space in which points become boundlessly denser toward the boundary. However, such a space can only be an algebraic manipulation and does not have any geometrical reality. This is so because various continuous sizes can only be 'translated' into various continuous degrees of density within the meaning of numbers.

3.2.3.3.4.4. The necessity to describe the 3-dimension itself as a Euclidean sphere, is identical with the necessity to demonstrate the describability of this 3-dimension itself. The 3-dimension itself consists of an infinite number of points which are uniformly dense and transpositional. It therefore already holds a one-one correspondence to the complemented Type II space. The describability of those points requires the 3-dimension itself to be identified with a Euclidean sphere and to form a spherical x-y coordinate. The 3-dimension (i.e. a Euclidean sphere) is therefore the external manifestation of the 3-dimension itself by the algebraic necessity that every coordinate is Euclidean. This algebraic necessity is not innate to the 3-dimension itself, but is external to it ; for it is a geometrical property of Type II space. The 3-dimension is therefore external to the 3-dimension itself and need to be identified with the latter by the latter. This identification is possible because Type I space transcendentally manifests itself as a circle in Type II space. A sphere is the 3-dimensional relation of circles which share a same centre. A sphere is identified with the 3-dimension itself by the 3-dimension itself because both can be externally identically described as the locus of points which hold at a certain line segment from a certain point. The 3-dimension externally requires the 3-dimension itself because a one-one correspondence cannot be commanded to the x-y coordinate from within this x-y coordinate. That is, a 'sphere' holds a one-one correspondence to the x-y coordinate and manifests itself as a sphere. A sphere consists of as many points as there are 3-dimensional directions because it is described as the locus of points which hold at a certain distance from a centre. This means that its boundary consists of an infinite number of points. A sphere therefore can be identified with a 'sphere' and holds a one-one correspondence to the complemented Type II space.

3.2.3.3.4.5. The conditionalization of a dimension is based upon the innate necessity of a lower dimension to be fully self-descriptive. Descriptions hold within a dimension in order to comply with the initial condition and to present whatever that can be described within that dimension. Descriptive means limit what can be described within a dimension. They are descriptive necessities within the materials of what has been already conditionalized. What could not be described in a lower dimension, can be known by its necessary schematic or dimensional existence without which that dimension could not have existed, but which could not be described within that dimension. What could not be described in a lower dimension, can be said to be described in a new dimension if and only if this lower dimension can be descriptively seen in this new dimension ; for a lower dimension self-describes itself as a new dimension.

3.2.3.3.4.5.1. The 3-dimension is a description within the 3-dimension itself. This is so because it is not itself the description of what could not be described in the 2-dimension. The 3-dimension is, however, also not the description of the 3-dimension itself. The 3-dimension need to be identified with the 3-dimension itself by the 3-dimension itself in order to hold a one-one correspondence to the complemented Type II space. This means that while the 3-dimension itself is not yet described, the description of the 3-dimension exists. The latter is based upon a descriptive necessity within the former and is therefore merely a description within the former. Consequently, it does not descriptively represent the former. The 3-dimension itself is the descriptive space of the 2-dimensionality and manifests itself as the 3-dimension in order to describe this 2-dimensionality. The 3-dimension is the description of the 3-dimension itself by means of an algebraic necessity. The description of the 3-dimension itself by the 3-dimension itself, constitutes a new dimension.

3.2.3.3.4.5.2. The 3-dimension itself is not a geometrical entity ; for it is neither a space nor a spatial entity. The 3-dimension itself is the space of Type I spaces and is a self-contained space-entity. Consequently, the 3-dimension itself cannot be described in terms of spatial relations. This means that the schema of geometry ends at the 3-dimension itself. The description of this space-entity constitutes another dimension. While the 3-dimension is the external manifestation of the 3-dimension itself by means of an algebraic necessity, this new dimension is the self-description of the 3-dimension itself. This new dimension is necessary because that algebraic necessity is external to the 3-dimension itself, and therefore because the 3-dimension itself yet need to describe itself from within itself. Such a new dimension is the 4-dimension and has a dimensional continuity and schematic integrity to preceding dimensions and schemata.

III - iv. Schema of Physics

4. 4-Dimension : The 4-dimension is the self-description of the 3-dimension itself. The 3-dimension itself differs from the 3-dimension in the sense that the latter is the demonstration of the describability of the former and is therefore descriptively contained in the former as its internal structure. This fundamentally differs from the case of the other dimensions. In the 1- and 2-dimensions the describability of each dimension could not be fully demonstrated within that dimension and therefore necessitated the conditionalization of another dimension such that makes that dimension fully self-descriptive in the sense that it can see itself in its wholeness in this conditionalized dimension. In contrast to this the describability of the 3-dimension itself is fully demonstrable within the 3-dimension itself. The describability of the 3-dimension itself is the existence of the 3-dimension itself. This is so because the 3-dimension itself is conditionalized in such a way as to be able to describe itself by holding a one-one correspondence to the complemented Type II space. The 3-dimension itself, however, differs from the 3-dimension because its own existence is externally constrained by the numerical evaluativity, which is a geometrical property of Type II space. That is, the necessity of forming a spherical x-y coordinate requires the 3-dimension itself to give rise to the Euclidean 3-dimensional coordinate and to identify itself with the 3-dimension (i.e. a sphere). Consequently, the describability of the 3-dimension itself can be fully demonstrable within the 3-dimension itself if and only if the 3-dimension itself is external to itself. This is so because the 3-dimension itself gives rise to the 3-dimension and yet need to identify it with itself by itself.

4.1. The describability of the 3-dimension itself is demonstrable within the 3-dimension itself. Consequently, this new dimension is conditionalized not to describe the 3-dimension itself but to describe the relation between the 3-dimension itself and the 3-dimension. The 3-dimension is the external manifestation of the 3-dimension itself. This means that their relation is an external self-relation and is identical with saying that the 3-dimension itself externally relates to itself. That is, the 3-dimension itself and the 3-dimension relate to each other by their unilateral identity which externally holds from the former to the latter. This is the relation between a ‘sphere’ and a sphere.

4.1.1. The 3-dimension is a sphere in the Euclidean 3-dimensional space and is the demonstration of the 3-dimension itself. A sphere differs from a ‘sphere’ only in the sense that it is numerically processed. If a ‘sphere’ is numerically processed by means of a one-one correspondence to the complemented Type II space, then it becomes merely identical with this complemented Type II space and therefore fails to describe its own self. A ‘sphere’ holds a one-one correspondence to the complemented Type II space and yet necessarily differs from it. A difference can be described if and only if it can be compared between two totalities. Therefore, the difference between a ‘sphere’ and the complemented Type II space can be described if and only if either of them can descriptively differentiate the other from within itself. This gives rise to two possibilities of describing such a difference : on one hand, a ‘sphere’ describes its difference from the complemented Type II space, on the other, the complemented Type II space describes its difference from a ‘sphere’. The former, however, does not hold because it has no means of description. That is, the coordinate of a ‘sphere’ can only be either identical with that of the complemented Type II space or numerically inevaluative. The latter holds in such a way that the complemented Type II space conditionalizes itself so as to be able to describe a ‘sphere’ within itself and then to show its difference from a sphere. The difference of a ‘sphere’ is therefore described by a sphere as the curvature of its coordinate which holds against, and is determined by, the Euclidean 2-dimensional coordinate. A sphere is therefore identified with a ‘sphere’ by a ‘sphere’ and holds a one-one correspondence to the complemented Type II space. This also means that a sphere is the external self of a ‘sphere’ within a ‘sphere’. This is so because a ‘sphere’ necessitates the complemented Type II space to conditionalize itself as the Euclidean 3-dimensional space.

4.1.1.1. A sphere not only exists in the Euclidean 3-dimensional space but also embodies it ; for each of them underlies the other in terms of a ‘sphere’. On one hand, the Euclidean 3-dimensional space is conditionalized in order to describe a ‘sphere’, on the other, a sphere is identified with a ‘sphere’ by a ‘sphere’. The Euclidean 3-dimensional space exists in order to describe a ‘sphere’. Therefore, the description of a ‘sphere’ (i.e. a sphere) descriptively embodies this Euclidean 3-dimensional space. That is, a ‘sphere’ is identical not with a sphere itself but with a sphere as the embodiment of the Euclidean 3-dimensional space. The Euclidean 3-dimensional space consists in and of such spheres (i.e. point-spheres, which are identical with 3-dimensional points).

4.1.1.1.1. The Euclidean 3-dimensional space has no geometrical reality because it is a product of the numerical evaluativity. The same can be said about the 3-dimensional elliptic space.

4.2. The 4-dimension is the self-description of the 3-dimension itself. This is so because the identification of a sphere with a ‘sphere’ is internally structural to the Euclidean 3-dimensional space. This means that whatever may be identified with the 3-dimension itself in the Euclidean 3-dimensional space, it is merely relating to itself. That is, the Euclidean 3-dimensional space is constructed necessarily in such a way that a ‘sphere’ can be identified with a sphere. Therefore, the description of a sphere in the Euclidean 3-dimensional space merely amounts to a self-description. The Euclidean 3-dimensional space is a space in which a sphere can be described, and vice versa. The dimensional continuity exists between the 3-dimension itself and the 4-dimension in the sense that the 4-dimension is the self-description of the 3-dimension itself.

4.2.1. A sphere is an entity with its own space ; for it embodies a space in which it exists. That is, a ‘sphere’ becomes a sphere and space. It is therefore relativistic to itself in the sense that it has nothing but itself to determine and to be determined. The description of such an entity is identical with the necessary ways by which this entity denotes itself.

4.2.2. There are two and only two ways by which an entity can denote itself :

(I) If an entity exists in a space and embodies it, then it is identical with every possible entity which exists in that space.

(II) If an entity exists in a space and embodies it, then it is identical with that space itself.

An entity which is identical with every entity in a space, only embodies that space and exists in it. However, an entity which is identical with a space, not only embodies that space and exists in it, but is also embodied, and is existed in, by that space. Consequently, a space in which an entity denotes itself as every possible entity in that space, is identical with an entity which denotes itself as its own space. For this reason (I) is the way by which an entity which denotes itself as its own space, denotes itself within itself, while (II) is the way by which an entity which denotes itself as its own space, denotes itself outside itself. (I) is therefore the internal denotation of a space and the external denotation of an entity, while (II) is the external denotation of a space and the internal denotation of an entity. (I) is the description of the way by which an entity exists in a space (i.e. the way by which entities stand to one another). (II) is the description of the way by which a space exists in an entity (i.e. the way by which spaces stand to one another), and stands for the self-description of FX. The Euclidean 3-dimensional space consists in and of point-spheres.

4.2.2.1. A sphere is identified with the 3-dimension itself. A sphere is identical with every possible entity in the Euclidean 3-dimensional space. This results in the conditionalization of a 4-dimension which consists in and of the Euclidean 3-dimensional space and the relation holding among every possible entity in that space. This is so because every possible entity is identified with one another in terms of an entity which exists in the Euclidean 3-dimensional space and embodies it.

4.2.2.1.1. A sphere holds at every possible center of the Euclidean 3-dimensional space. In the Euclidean 3-dimensional space every 3-dimensional point can be a centre. A centre can describe itself as a centre and becomes the centre. Consequently, every 3-dimensional point is transpositional to one another in the sense that any of them could have been the centre. This is so because, on one hand, every 2-dimensional point is transpositional to one another in Type II space, on the other, two Type II spaces determine the Euclidean 3-dimensional space between them by holding a one-one correspondence to each other in such a way that any two Type II spaces can be such two determinant Type II spaces if and only if they have any 2-dimensional distance between them. Consequently, a 3-dimensional point is a point such that can be determined if and only if the following conditions are satisfied :

I) Any two intersecting 2-dimensional directions could have determined Type II space.

I-i) Therefore, any 2-dimensional points could have been the centre and are therefore transpositional to one another. That is, a centre becomes the centre if and only if it is described as a centre.

II) Every 2-dimensional direction consists of an identical number of 2-dimensional points. That is, every 2-dimensional direction is identically intersectible by other 2-dimensional directions.

II-i) Therefore, any two intersecting 2-dimensional directions consist of an identical number of 2-dimensional points and describe identically.

III) Type II space is identically determined by any two intersecting 2-dimensional directions because any two determinant intersecting 2-dimensional directions become spatial only simultaneously as they intersect each other and determine Type II space.

III-i) Therefore, Type II space is identically described by any two intersecting 2-dimensional directions. This also means that the description of Type II space is due to any one, but one and only one, of sets of two intersecting 2-dimensional directions.

IV) Type II space is uniformly dense because it can be determined by any two intersecting 2-dimensional directions and therefore has a spatiality such that complies with the indiscriminateness of the intersectibility of any two determinant intersecting 2-dimensional directions.

IV-i) The uniform density of Type II space is descriptively simultaneous with the spatiality of such two determinant intersecting 2-dimensional directions. Therefore, these two intersecting 2-dimensional directions embody this uniform density in their given spatiality if and only if they are descriptively taken to determine Type II space.

V) Whatever may exist in Type II space, it can be determined by such two determinant intersecting 2-dimensional directions ; for Type II space itself is determined by them.

V-i) Type II space is determined by the relation between two determinant intersecting 2-dimensional directions. This relation can therefore determine anything in Type II space. This includes every other 2-dimensional direction.

VI) This relation between two determinant intersecting 2-dimensional directions is spatial and simultaneously stands for the uniform density of Type II space.

VI-i) This relation forms the x-y axes and gives rise to a 2-dimensional point which describes itself as a centre and becomes the centre. The x-y axes form the Euclidean 2-dimensional coordinate.

VII) There exists a totality which holds a one-one correspondence to this coordinate and need to be processed by this coordinate.

VII-i) Therefore, this one-one correspondence holds between two of this coordinate and identifies that totality between them.

VIII) This one-one correspondence forms a space in such a way that the x-y coordinate itself is freely and continuously transpositional between two determinant x-y coordinates. This is so because any two x-y coordinates can be those two determinant x-y coordinates if and only if they have any 2-dimensional distance between them.

VIII-i) This one-one correspondence holds between points of such two determinant x-y coordinates. This means that a one-one correspondence between the centres of those two x-y coordinates forms a new axis (i.e. the z-axis), and that along this new axis there exists a freely and continuously transpositional x-y coordinate.

IX) The centre of this space is the centre of this transpositional x-y coordinate. This x-y-z axes can determine every point (i.e. 3-dimensional points) in this space.

IX-i) Therefore, anything in this space can be described by the x-y-z axes.

X) This centre is transpositional because any 3-dimensional points could have been the centre of this space.

X-i) If a sphere is identical with every possible entity in this space, then it is located at every 3-dimensional point of this space.

4.2.2.1.1.1. A sphere can be described at every possible centre of the Euclidean 3-dimensional space and therefore holds at any 3-dimensional points in this space. The size of a sphere remains identical with that of a 3-dimensional point unless a centre describes itself as a centre and becomes the centre. This is so because a sphere can have a size if and only if it can be described as a relation of relations of 3-dimensional points which can constitute a locus by means of their transpositionability as determined from and by the centre. If no centre is descriptively taken as the centre, then a sphere is a point-sphere and is identical with a 3-dimensional point itself. The Euclidean 3-dimensional space can become a coordinate if and only if a centre is descriptively taken as the centre. Solids and figures exist only in a coordinate because they can only be a relation, or a relation of relations, of 3-dimensional points. The size of a solid or figure holds only as that of a locus and therefore can only be determined in a

coordinate. The size which need not hold as that of a locus is only that of a 3-dimensional point itself. This is so because every 3-dimensional point is a centre and exists on its own in the sense that it could have determined an identical Euclidean 3-dimensional space. Any 3-dimensional points could therefore have been the centre of the Euclidean 3-dimensional space. 3-dimensional points are the basis of a Euclidean 3-dimensional coordinate and therefore can exist with or without being determined by the centre. Every other entity (i.e. solids and figures) can only exist in a coordinate.

4.2.2.1.1.1.1. Only the centre can be transpositional. The transpositionability of the centre stands for the meaning of a centre and therefore does not physically determine 3-dimensional points. That is, the centre is transpositional to any 3-dimensional points in the sense that it descriptively represents the uniform density of the Euclidean 3-dimensional space and therefore gives rise to a spatial location to every 3-dimensional point in their relation to this centre. This uniform density is represented by what schematically determines a point which is described as the centre. Such a representation takes place as the formation of axes and gives rise to a coordinate. Therefore, a coordinate and the transpositionability of its centre stands for the meaning of a space which consists of uniformly dense centres. A coordinate is the internal structure of such a space and gives rise to a spatial location to everything in their relation to the centre. In this internally determined space every entity is a locus of a single identical point by means of its transpositionability as determined from and by the centre. The transpositionability of the centre therefore only means the descriptive allocation of a spatial location to every 3-dimensional point in their relation to the centre. Such a space is a geometrical space.

4.2.2.1.1.1.2. This geometrical space becomes physical if and only if no centre describes itself as a centre and forms the centre. This is so because if this space cannot be internally determined and therefore cannot be described in terms of the geometrical property of points (i.e. the transpositionability of the centre), then it can only be described in terms of some common descriptive property of every point or in terms of a descriptive necessity for this space itself. That is, this space can be described by means of

(I) an entity which is identical with every point in this space or

(II) an entity which is identical with this space itself.

(II) descriptively recurs to (I) because it stands for the self-description of FX.

4.2.2.1.1.2. A sphere identifies itself with every possible entity in the Euclidean 3-dimensional space and therefore embodies and exists in it. If the Euclidean 3-dimensional space does not have the centre, then there exist in this space no entities except point-spheres, which are identical with 3-dimensional points themselves. This is so because in such a space only 3-dimensional points themselves can be described and therefore exist. Consequently, every sphere is identical with one another in terms of a sphere which embodies and exists in this centreless Euclidean 3-dimensional space.

4.2.2.1.1.3. This centreless Euclidean 3-dimensional space is open, infinite and uniformly dense. This is so because this space holds by a one-one correspondence between two Type II spaces with any 2-dimensional distance between them. If no particular centre is taken as the centre, then this space becomes the space of spaces such that consists in and of a single 3-dimensional point. That is, it is identical with a space in which every centre is the centre and forms its own space ; for if no centre is the centre, then every centre is the centre. The centreless Euclidean 3-dimensional space is identical with the space of spaces every one of which consists in and of a single centre.

4.2.2.1.1.4. A 4-dimension is therefore a space which consists of spaces in every one of which there is a single 3-dimensional point. Every 3-dimensional point is identical with one

another in terms of a sphere instead of the transpositionability of the centre. Only this sphere is 4-dimensional in the sense that it embodies and exists in this centreless Euclidean 3-dimensional space, while 3-dimensional points exist only in those sub-spaces. A 4-dimension is a space which consists of spaces in any one, but one and only one, of which there is this sphere. This is so because while a sphere is an entity in each sub-space as well as in the space of such sub-spaces, a 3-dimensional point can only be an entity in each sub-space. That is, no particular 3-dimensional point is in a position to determine every other one. Every 3-dimensional point exists only on its own, but still determines the space of sub-spaces, because they all determine an identical space. This means that, on one hand, every 3-dimensional point is 3-dimensionally identical with a sphere, on the other, any one, but one and only one, of 3-dimensional points is 4-dimensionally identical with a sphere. Therefore, in this centreless Euclidean 3-dimensional space a sphere is 3-dimensionally in every one of sub-spaces, while it is 4-dimensionally in any one, but one and only one, of sub-spaces. This is so because a 4-dimension consists of sub-spaces, and therefore because a sphere can only be 4-dimensionally in one of such 3-dimensional sub-spaces.

4.2.2.1.1.4.1. Every sub-space differs from one another because a sub-space either coincides with, or differs from, another sub-space. There are as many sub-spaces as there are two different intersecting 2-dimensional directions and different 2-dimensional distances. In the Euclidean 3-dimensional space a one-one correspondence between two 2-dimensional points of two identical Type II spaces determines a 3-dimensional direction, while 2-dimensional directions remain identical and become 3-dimensional directions. Such 3-dimensional directions acquire their spatiality in accordance with the uniform density of this space and can determine every other 3-dimensional direction. Therefore, they form the x-y-z coordinate without any axes and are therefore identical with the x-y-z lattice. A unique set of three such determinant 3-dimensional directions is a ‘space’. The totality of unique sets of three such determinant 3-dimensional directions is the ‘absolute space’. The former is identical with a sub-space and becomes a position in the absolute space. The number of positions is infinite because there are an infinite number of different determinant 3-dimensional directions. Therefore, this absolute space is infinite.

4.2.2.1.1.4.1.1. A coordinate becomes a lattice if and only if it does not have axes. This is so because without axes every direction is on its own and is therefore absolute. This means that every direction must manifest the uniform density in their spatiality.

4.2.2.1.1.5. That entity (i.e. a sphere) which is identical with every 3-dimensional point, is necessarily one, and one only. This is so because if there are more than one such entity, and if they are not identical with each other, then a unique set of three 3-dimensional directions can determine more than one 3-dimensional point. This entity can be at any positions in so far as there are different set of three 3-dimensional directions. A single entity which can be at every different position, is in itself manifold. However, an entity in one position is not descriptively identical with one in another ; for two positions consist in and of different set of three 3-dimensional directions. The absolute space is the totality of unique sets of three 3-dimensional directions and has one and only one entity in it. Consequently, it is identical with a totality of positions such that any one, but one and only one, of them is filled with an entity. Every totality of such position is identical with one another in terms of this absolute space ; for the meaning of this absolute space does not specify any positions of this one and only one entity. However, the totality of such totalities is not necessarily identical with one of such totalities. Therefore, this absolute space fails to embrace such a totality of totalities.

4.2.2.1.1.5.1. This totality of totalities remains identical with a totality if and only if an entity remains occupying an identical position. Such a totality of totalities is an inertia system. Therefore, there are as many inertia systems as there are different positions in this centreless Euclidean 3-dimensional space.

4.2.2.1.1.5.2. Within each totality of totalities that single entity makes positions relative to each other. On one hand, there is a position which is filled with this entity, on the other, there are those which are not. These two sets of positions are relative to each other because each determines the other. If positions are relative to each other in terms of an entity, then there is a unilateral relation which holds between any two of every totality of positions. That is, if the totality of totalities is not an inertia system, then a totality relates to another totality necessarily in such a way that between them a same position cannot remain filled with an entity. In other words, within a totality in its relation to the totality of totalities positions relate to each other in terms of an entity necessarily in such a way that a position filled with an entity 'becomes' empty, and one of empty positions 'becomes' filled with this same entity. Within the totality of totalities this unilateral relation holds necessarily and only between any two totalities. This is so because positions relate to each other necessarily and only in terms of a set of single position filled with an entity and another set of every other position which is empty. Therefore, if a position which is the only element of the former set once becomes an element of the latter, then there is nothing which necessitates it to retain its former identity. This means that the totality of totalities holds if and only if there are no two succeeding totalities between which a same position remains filled with an entity.

4.2.2.1.1.5.3. Within the totality of totalities this unilateral relation holds between any two totalities and recurs itself 1-dimensionally. This is so because any two unilaterally related totalities retains their identity in such a way that one loses its identity in the other. This means that totalities are 1-dimensionally related to one another in such a way that one determines another and loses its identity in it. Therefore, this unilateral relation can hold 1-dimensionally even if it holds between same two totalities and repeats itself backward and forward. This unilateral relation is a 'time', while the 1-dimensional totality of recurring unilateral relations is the 'absolute time'. A time holds between two moments and refers to two unilaterally related totalities (i.e. two unilaterally related absolute spaces). Consequently, the description of a moment and that of an absolute space are identical. However, a moment differs from an absolute space in the sense that while a moment is meaningless on its own, an absolute space is meaningful on its own. A moment necessarily presupposes a time. A time in turn necessarily presupposes the absolute time. Therefore, a moment can only be a part of a whole. A whole descriptively precedes a part. This answers Zeno's paradoxes. This absolute time is the 1-dimensional, infinite recurrences of a time. Either there is no time, or time is 1-dimensionally infinite. The former is the case if and only if the absolute space is an inertia system. Otherwise, there necessarily exists the absolute time, which starts with an absolute space. The absolute space gives rise to the absolute time because unless it is an inertia system, it is necessary for the absolute space to differentiate within it two sets of positions which cannot retain their identity to themselves and therefore give rise to any two, but two and only two, different sets of positions and lose their identity in them. The absolute space, in this sense, becomes an absolute space.

4.2.2.1.1.5.3.1. An absolute space gives rise to the absolute time. This means that the totality of times is given by the existence of the totality of 'divisibles'. Therefore, a time exists between two 'divisibles' only in the sense that it holds between two unilaterally related absolute spaces.

4.2.2.1.1.6. If the absolute space is an inertia system, then there are as many absolute spaces as there are positions in it. However, such absolute spaces cannot describe themselves without conditionalizing the totality of times. That is, if the absolute space is an inertia system and remains so , then it is unable to describe itself. This is so because in the absolute space every position is a centre and is not internally determinable in its some absolute relation to every other. Consequently, every inertia system is descriptively identical with one another and has no interrelation among them. No description holds among identical descriptions because there can be no descriptive necessity to repeat an

identical description. This only means that the absolute space cannot remain an inertia system without contradicting the initial condition and therefore necessarily conditionalizes the absolute time. The totality of times is therefore conditionalized as the description of the existence of an infinite number of absolute spaces. Consequently, the two and only two ways of the existence of the absolute space are necessitated to be related to each other by a descriptive necessity. The absolute space is not either an inertia system or a temporal existence, but is both. It starts with itself (i.e. as an inertia system) and results in a temporal existence. This means that the centreless Euclidean 3-dimensional space is identical with an inertia system, and that an inertia system conditionalizes itself as a temporal existence in order to describe itself. An inertia system is therefore 'moved' into the totality of times by its own self-imposed descriptive necessity. Given this necessity, an entity cannot resist being put into an absolute space which exists as a moment. Once put into such a space, it 'moves' in the totality of times and therefore follows the infinite, 1-dimensional course of times. Therefore, once released from the state of inertia, an entity keeps on 'moving' 1-dimensionally in the infinite totality of times. In the absolute space this means that an entity does not stop 'moving' once it has started. It infinitely 'moves' on necessarily in such a way that a same amount of time always elapses between any two moments. This is so because an entity is always put into a next moment by a same descriptive necessity. The absolute time is the infinite repetitions of such a relation between two moments. That is, a moment itself does not present a time, and each moment is temporally identical. Therefore, if a time holds necessarily between any two moments, then every time must also be identical. The absolute time is the 1-dimensional totality of times which identically hold between any two moments. An identical time holds between any two moments because every moment loses its identity in another moment if and only if they are not identical with each other. The absolute time is therefore the uniform repeated elapses of an identical time. This uniformity of the absolute time is correlated with that of an absolute space. An identical time elapses between any two moments because the describability of the uniform density of the centreless absolute space makes it necessary for any two moments to differ from each other. Any two moments are necessitated to differ from each other by an identical necessity and therefore hold an identical time between them. This identical necessity is the same necessity by which an entity is released from the state of inertia. The absolute space and time are therefore coordinated in such a way that an entity 'moves' from a position to another taking an identical space and time. This is so because any two moments are made to differ from each other by the necessity which releases an entity from the state of inertia and put it into a moment. This necessity therefore spatially and temporally quantifies itself as what spatially and temporally holds, on one hand, between two positions, on the other, between two moments. This necessity coordinates spatial positions with temporal moments and recursively, identically repeats itself. Once released from the state of inertia, an entity 'moves' 1-dimensionally and infinitely. This is so because an entity is released from the state of inertia by its own self-imposed necessity and therefore embodies this necessity in its spatial and temporal identity. This means that an entity is internally determined to externally follows the properties of this coordinated absolute space and time. The uniform density of the absolute space determines a 'straight line' as a straight line. A straight line therefore manifests a spatial property of the absolute space. Consequently, a straight line corresponds to the temporal 1-dimensionality of the absolute time.

4.2.2.1.1.6.1. The 'motion' of an entity is the spatial and temporal identification of the self-imposed necessity of an entity to release itself from the state of inertia. An entity is at first in the state of inertia and then imposes itself with the necessity to release itself from it. This is so because an entity finds itself unable to describe itself if it remains in a same position where it is descriptively given. Such a 'motion' is therefore accompanied with the possibility of an infinite variety of 'velocity' because an entity can be released from its given position to any other position if and only if it 1-dimensionally, infinitely repeats this initial 'motion' by which it spatially and temporally identifies itself. If it remains where it is descriptively found, then it gives

rise to an infinite number of identical descriptions and therefore contradicts the initial condition ; for without the centre every position is descriptively identical with one another in the absolute space.

4.2.2.1.1.6.2. If an entity moves on 1-dimensionally, infinitely, taking a same amount of time for a same amount of space and preserving a same direction, then it can move backward and forward between same two positions taking a same amount of time for each passage ; for a 1-dimension consists in and of two and only two directions. Such two directions can be described if and only if this 1-dimension is finite. Therefore, if two positions have a finite amount of space between them and are related to each other necessarily in such a way that the existence of each position determines that of the other in the coordinated absolute space and time, then two and only two directions hold between them and are also mutually determinative. Two positions can be said to determine each other if and only if they exist in that coordinated absolute space and time and would identically relate to every other position. Such two positions are physical and yet have no amount of space and time between them.

4.2.2.1.1.6.2.1. Such two positions are hypothetical because if they do exist spatially and temporally, then they cannot identically relate to every other position. This means that an action-reaction can only hold approximately in the coordinated absolute space and time. An inertia system is also hypothetical because if it does exist, then it necessarily entails the absolute time.

4.2.2.1.1.7. An inertia system necessarily gives rise to the absolute time. However, it is necessary for an inertia system to find that it cannot describe itself without contradicting the initial condition. An entity is self-imposed with the necessity to move because if it remains in the state of inertia, it cannot describe itself. The meaning of a ‘mass’ is that an entity cannot move without appealing to the initial condition in order to find that it cannot remain in the state of inertia. This means that it is necessary for an entity to be initially in the state of inertia in order to have a necessity to release itself from it. Therefore, an entity initially resists to being ‘accelerated’. The ‘mass’ of an entity is this necessity to resist. The existence of an entity and its property of having a ‘mass’ are identical with the existence of an inertia system and its necessity to conditionalize the absolute time in order to describe itself. Consequently, an entity becomes a temporal entity if and only if it has a ‘mass’. Without having a ‘mass’ an entity cannot move. In the coordinated absolute space and time there is no entity without a ‘mass’. Having a ‘mass’ is therefore a necessary property of an entity. In this sense a ‘mass’ can be neither created nor destroyed. It is a descriptive necessity.

4.2.2.1.1.8. An entity is, in itself, multiple in terms of a ‘mass’. This is so because an entity releases itself from the state of inertia and can move from a given position to any other position. To whichever position it may make its initial movement and then carry on along the same direction, an identical time elapses between any two positions. An entity is descriptively motivated to release itself from the state of inertia and to move to any other position by an identical descriptive necessity of making itself describable. This means that this necessity can be identically satisfied if and only if an entity moves from a given position to any other position. A time is the fulfillment of this necessity and therefore identically holds regardless of an infinite possible variety of initial movements which an entity can make. That is, an identical time elapses whether an entity moves to the nearest position or to the furthest position. This varies from an infinitesimally near position to an infinitely distant position. The ‘mass’ of an entity therefore varies from infinity to infinitesimal. The more resistant an entity is to its own necessity (i.e. the more resistant inertia an entity has), the less distance it can travel. One and only one entity exists in the absolute space and has an infinite variety of ‘masses’. The description of such an entity in terms of its infinite variety of ‘masses’ results in an absolute space which is filled with an infinite variety of ‘masses’.

4.2.2.1.1.8.1. Given an infinite variety of masses, that identical necessity of an entity’s describing itself gives rise to an infinite variety of ‘forces’. A ‘force’ is that necessity in its

relation to the mass of an entity. A ‘force’ therefore works on a mass in such a way that the stronger it is, the longer distance a mass can travel taking a same amount of time, or in such a way that the larger a mass is, the stronger ‘force’ it requires in order to travel a same distance taking a same amount of time. This correlation between a ‘force’ and a mass is based upon the internal multiplicity of an entity which has a necessity to release itself from the state of inertia and can identically satisfy this necessity if and only if it moves to any other position.

4.2.2.1.1.8.2. A ‘linear velocity’ is the motion of a mass which is described in terms of a force which it requires in order to travel a certain distance taking a same amount of time in the coordinated absolute space and time. The magnitude of this ‘velocity’ can range between infinitesimal and infinity in accordance with the magnitude of a force which is available. A mass is the inertia of an entity. Consequently, if an entity can have an infinite variety of masses, then it can also have an infinite variety of ‘velocities’. The motion of a mass has a direction. Therefore, a ‘linear velocity’ consists of a magnitude and a direction. An entity therefore has a mass and a ‘linear velocity’. The description of an entity in terms of a mass and a ‘linear velocity’ is a ‘linear momentum’. The ‘momentum’ of an entity in the state of inertia is identical with its mass. A ‘momentum’ is identical between the product of the smallest mass and the largest ‘velocity’ and that of the largest mass and the smallest ‘velocity’. This is so because the infinite variety of motions of an entity can only be based upon an identical necessity of this entity’s describing itself. Therefore, such motions are only based upon an identical force whose variety is inversely correlated with that of the mass of an entity.

4.2.2.1.1.8.3. Once given, the mass of an entity does not change in the coordinated absolute space and time. This is so because an entity releases itself from the state of inertia and determines a mass depending upon the distance of a position to which it makes its initial motion. This initial motion, however, uniformly repeats itself in the totality of times. Therefore, once given this initial acceleration, a mass is determined and preserved. That is, a mass can only be determined by this initial acceleration of an entity from the state of inertia by the necessity of this entity’s describing itself. Once determined, a mass physically represents this entity. Any further accelerations and decelerations can only be interactions between or among masses in terms of changes in their velocity. The change of a momentum is therefore described solely in terms of the change of a velocity (i.e. of a direction and/or a magnitude). A mass is therefore the self-description of an entity in the coordinated absolute space and time. Within this absolute space and time changes can only take place between masses, not in and between that entity. A momentum can therefore change if and only if the velocity of a mass changes. Such changes can only be external and are caused by interactions between or among masses. Masses are described to interact with one another only in terms of attraction. This is so because the coordinated absolute space and time is open, uniform and infinite and does not physically interact with its substances once they are determined by and from the only entity of this absolute space and time. Attraction is the external relation among masses and takes place only in such a way as to preserve their total momenta. This is so because each mass is the description of an identical entity, and because such a relation forms a system whose totality refers to the totality of those descriptions of an identical entity. Masses attract one another and result in various changes of momenta. This is so because, on one hand, their velocity varies, on the other, they interact with one another by attraction.

4.2.2.1.1.8.3.1. The change of a momentum is described in terms of a time ratio. This is so because this change occurs between absolute spaces in their relation to the absolute time. The description of such a time ratio of change of a momentum is identical with a force. If a mass is constant, a force is identical with the description of an entity in terms of its mass and an acceleration.

4.2.2.1.1.8.3.2. Masses attract one another because they are all identifiable with one another in their reference to that one and only one entity of this absolute space and time. This,

however, means that masses are not independent from one another and give rise to a self-imposed necessity for this absolute space and time to interact with its substances. Therefore, this absolute space and time loses its descriptive necessity to be as it is from within itself. The cause of attraction therefore cannot be described within this absolute space and time. Attraction can only be taken for granted in this absolute space and time.

4.2.2.1.1.9. A mass, a force and a velocity are related to one another in such a way that given a certain amount of force, an entity has a momentum depending upon its mass. This means that

i) if the amount of a given force is same, then a smaller mass has a larger velocity,

ii) if a mass is same, a stronger force gives a larger velocity,

iii) if a velocity is uniform, then a mass acquires this velocity from a force which is initially given in order to release an entity from the state of inertia.

An entity is initially in the state of inertia. The mass of an entity is constant because it is innate to this entity. This also means that a mass is always finite, while a force and a velocity can be infinite in magnitude. This is so because if an entity has an infinite mass, then no force can release it from the state of inertia.

4.2.2.1.1.9.1. The measurement of an entity can only be in terms of a ratio. This is so because, on one hand, every physical property of an entity (i.e. a mass, a force and a velocity) is correlated with one another, on the other, every entity is identical. Consequently, such properties can only be described by being compared with one another. They can be compared if and only if one of them is taken as a constant so that others can be compared on this basis.

4.2.2.1.2. In the coordinated absolute space and time there descriptively exist an infinite number of finite masses. This is originated in one and only one absolute space with one and only one entity. This entity necessitates itself to conditionalize such masses because if it stays in the state of inertia, it cannot describe itself without resulting in an infinite number of identical descriptions of an inertia system and therefore without contradicting the initial condition. This entity remains one, and one only, if and only if it imposes itself with a necessity to conditionalize masses together with the absolute time. That is, this entity does not contradict the initial condition if and only if it is self-imposed with the necessity to describe itself in terms of masses. Only by self-imposing such a necessity this entity can remain one, and one only, and can stay in the state of inertia without contradicting the initial condition. Therefore, there can be an inertia system without contradicting the initial condition if and only if it is the system of an entity which is self-imposed with such a necessity. Such a system is the cause of the absolute time. This system has a necessity to conditionalize masses. However, this system is not a part of the absolute time and therefore has a necessity to describe itself within the absolute space and as a part of the absolute time in order to complete its descriptive gap in its continuity with the absolute time. That is, the cause of the absolute time must be able to describe itself as a part of the absolute time in order to describe its relation to as well as from the absolute time. This means that this system must be described in terms of a mass instead of an entity ; for that entity conditionalizes itself as masses and therefore do not itself exist in the absolute time. Only masses exist in the absolute time. Within the coordinated absolute space and time an inertia system can only be that of an infinite mass. No force but its own descriptive necessity can accelerate an infinite mass. Such an infinite mass can only be formed as the totality of an infinite number of finite masses ; for there exist only finite masses in this absolute space and time. This means that finite masses have a necessity to form such a totality. Such a necessity exists as the internal structure of a mass to interact with every other mass in such a way as to form the totality of an infinite mass. Consequently, only this infinite mass is exempt from such an interaction. The coordinated absolute space and time therefore holds between two inertia systems : one is

that of an entity and is the descriptive cause of the absolute time, the other is that of an infinite mass and is the continuous, physical cause of the absolute time. The coordinated absolute space and time infinitely recurs between these two inertia systems. This is so because the second inertia system can only be the final outcome of spatial and temporal interactions among finite masses in the coordinated absolute space and time. If an infinite mass is exempt from such spatial and temporal interactions, then the absolute time does not hold in that mass. There can be no force which can accelerate an infinite mass. An infinite mass therefore forms an inertia system and has no absolute time. Without the absolute time no mass can descriptively exist as a mass. An infinite mass is therefore descriptively identical with that entity which is self-imposed with a necessity to give rise to finite masses and the absolute time. Consequently, those two inertia systems are identical with each other in such a way that each is the cause of the other. The coordinated absolute space and time recurs between them.

4.2.2.1.2.1. Therefore, an entity which has a necessity to conditionalize masses, also has a necessity to describe itself in terms of such masses. The former necessity is the descriptive necessity of an entity in the absolute space, while the latter is the descriptive necessity of an entity in the absolute time. The latter therefore follows from the former. By the latter necessity masses have a necessary property of forming a totality among themselves. This necessary property of masses is ‘gravitation’. ‘Gravitation’ is a common property of masses. By ‘gravitation’ masses form a totality among themselves and become a single inertia system. Each mass is therefore a ‘gravitational mass’ and relate with every other mass in terms of ‘gravitation’. The total ‘gravitational mass’ is infinite and static, while each ‘gravitational mass’ is finite and dynamic. ‘Gravitational masses’ interact with one another and, by so doing, also interact with the coordinated absolute space and time itself. This is so because ‘gravitation’ makes masses more and more inertial.

4.2.2.1.2.1.1. A mass also has an ‘inertial mass’. An ‘inertial mass’ determines its linear velocity from a given force. A force is identically given to every mass. Therefore, a smaller ‘inertial mass’ has a larger linear velocity. Gravitation is a relational force which works in order to form an inertia system out of all masses and therefore must be inversely proportional to the magnitude of a velocity. This is so because gravitation is innately concentric and therefore must be at work inversely to a linear velocity. Therefore, a larger inertial mass must have more gravitation at its disposal. This means that a gravitational mass is identical with an inertial mass. A larger inertial mass means a smaller linear velocity and a larger gravitational mass. That is, the meaning of gravitation is indeed the inverse of that of a linear velocity. This is the cause of the recursiveness of the self-degeneration of the coordinated absolute space and time and complies with the self-imposed necessity of this absolute space and time.

4.2.2.1.2.1.2. A gravitational mass is a relation between a mass and every other mass. Therefore, its measurement can only be in terms of a ratio.

4.2.2.1.2.1.3. A mass is linearly additive. This is so because the coordinated absolute space and time is uniform. That is, every position is related to every other position by uniformity. This also means that any combinations of masses by means of gravitation is also linearly quantitative.

4.2.2.1.2.2. Gravitation is a common necessary property of every mass. Masses vary in their inertial mass and therefore also vary in their gravitational mass. Consequently, some masses have more gravitational mass than others. The coordinated absolute space and time initially consists of an infinite number of momenta which are identical in magnitude but differ in directions. The various directions of these momenta are, however, disturbed, and their identical magnitude comes to differ from one another. This is caused by attraction of masses because of gravitation. A gravitational mass is determined not by an inertial mass, but both determine each other. Gravitation is at work from the outset of the absolute time. Momenta therefore influence one another by

gravitation from the outset of the absolute time. In the coordinated absolute space and time interactions among masses exist from the very beginning. The identical magnitude of momenta therefore holds only at the descriptive beginning of this absolute space and time and therefore does not physically hold. This absolute space and time has an innate necessity of physical self-degeneration. ‘Bodies’ are conditionalized by this necessity that the various directions and identical magnitude of momenta are physically distorted in accordance with the necessity for gravitation. Gravitation works spatially and temporally between every mass and every other mass and is not symmetrical because of the 4-dimensional topography of this coordinated absolute space and time. That is, an entity conditionalizes a centre by forming masses with an infinite variety of velocity. This centre makes gravitation asymmetrical.

4.2.2.1.2.2.1. Masses differ from one another inertially and gravitationally and form bodies. Equally, bodies differ from one another inertially and gravitationally and form bodies of a higher level. This process spatially and temporally continues until there exists one and only one body. This body possesses an infinite inertial, gravitational mass as a totality and is therefore itself an inertia system. Except for in this final body masses still exist in the absolute space and time. Therefore, in and among bodies other than this final body there also exists the absolute space and time.

4.2.2.1.2.2.2. Gravitation therefore holds not only among bodies but also within bodies. A gravitational mass is relational and therefore makes the motion of a body also relational. Given two bodies, they are relational in such a way that the centre of the mass of each body is not identical with the geometrical centre of each body and deflects toward each other. Gravitation holds not only between those two centres of mass but also between every part of each body. While gravitation within each body centres at its geometrical centre, gravitation between two bodies deflects those centes toward each other. Bodies have a size, and gravitation holds between every mass or body and every other mass or body in inverse proportion to their distance to one another. This gives rise to a relational motion between those two bodies. This relational motion is centred at those two deflected centres and is mutual and dynamic. It is dynamic because if every part of each body holds gravitation to every part of the other body, then gravitation does not hold symmetrically between those two bodies. Moreover every body has gravitation to every other body and makes such a motion multi-relational. Such multi-relational, dynamic motions form rotations and revolutions of celestial bodies in the ever-degenerating absolute space and time. A gravitational mass is, by itself, dynamically relational and therefore innately has a force. An ‘angular momentum’ is given by such a force. Such an innate force is inversely proportional to the linear velocity of a mass. This is so because while a linear velocity is inversely proportional to a gravitational, inertial mass, gravitation is proportional to it. This also means that a mass or body with a larger linear velocity comes to have a smaller angular velocity.

4.2.2.1.2.2.3. Gravitation holds in inverse proportion to distance ; for it exists in the absolute space and time and therefore must comply with the properties of the absolute space and time. In the absolute space and time every mass is initially given an identical force. Consequently, a smaller inertial mass has a larger linear velocity and is therefore more distant from every other mass or body. A gravitational mass is identical with an inertial mass because gravitation exists in order to make this absolute space and time an inertia system and is therefore concentric. Larger inertial masses have a smaller linear velocity and are therefore closer to one another. This is so because a single entity conditionalizes every mass by moving to any positions in the absolute space and time and therefore becomes the centre of this absolute space and time. Consequently, the possession of a larger gravitational mass by a larger inertial mass is inherently compatible with the self-imposed necessity of this absolute space and time. Smaller gravitational masses and bodies have a larger linear velocity and are therefore more distant not only from that centre but also from one another. Larger gravitational masses and bodies have a smaller linear velocity and are therefore closer not only to that centre but also to one another. The more concentrated

gravitational masses and bodies are, the more gravitation they can exert upon those which are not immediately a part of them. Therefore, the closer gravitational masses and bodies are, the stronger they interact with one another. That is, the shorter distance they have to one another, the stronger gravitational interactions they possess between or among them. This is so because, by so doing, they can exert more gravitational influence upon more distant masses and bodies, which would, otherwise, have a weaker and weaker gravitational influence to one another. This complies with the meaning of gravitation and the self-imposed necessity of this absolute space and time.

4.2.2.1.2.3. Between the two inertia systems, which are symmetric in the sense that they have no parts, the 4-dimensional topology is internally asymmetric and externally symmetric. An infinite variety of momenta created by the necessity to conditionalize masses together with the absolute time, makes the 4-dimension inherently dynamic and hence asymmetric. Asymmetricity is described as dynamic process toward symmetricity because at any points in a sequence of times asymmetricity is incomplete as a description. That is, any descriptions at time *t* are by themselves asymmetric in the sense that they are descriptions of moments. Any linear sequences are asymmetric. Asymmetricity goes hand in hand with the degeneration of the coordinated absolute space and time and is a descriptive necessity of an inertia system. Asymmetricity recurs between two symmetric systems.

4.2.2.1.3. If no distinction is made between a mass and a body, then it looks as if they have both an inertial mass and a gravitational mass separately. Therefore, a body is as necessary a substance of the absolute space and time as a mass. A body is not a mere collection of masses but a system of its own. It has a necessary meaning of its own and is a necessary existence in the absolute space and time.

4.2.2.2. In the absolute space and time a mass can attain an infinite velocity if and only if it is a finite mass. This is so because the inertial mass of a mass is a property which is inherent to this mass and is therefore independent from a velocity. A velocity is given to a mass by a force which releases it from its initial state of inertia. This force is conditionalized by a descriptive necessity of an entity in the state of inertia so that this entity can describe itself without contradicting the initial condition. That is, this entity has a necessity to accelerate itself and to make itself a mass. This necessity is satisfied if and only if this entity moves to any positions in the absolute space and conditionalizes an identical absolute time. The distance between this entity and such positions ranges from infinitesimal to infinity and therefore determines an infinite variety of inertial masses of this entity ; for this entity is moved by an identical descriptive necessity and therefore by an identical force and determines an identical time. Every inertial mass has a velocity in such a way as to form an identical magnitude of their momentum. Within the absolute space and time an inertial mass and a velocity are, however, independent from each other. This is so because their coexistence is determined not within the absolute space and time but by the necessity to conditionalize this coordinated absolute space and time. This means that within the absolute space and time no cause to relate them together can be found. Within the absolute space and time a force can only be described as an inherent constituent of a momentum.

4.2.2.2.1. A force cannot be itself described within the coordinated absolute space and time. This is so because this absolute space and time is itself conditionalized by this force. This force therefore can only coincide with the absolute space and time itself. The absolute space and time is itself a whole. Such a whole is itself an entity which forms its own space. An entity is spatially and temporally free if it is its own space. The absolute space and time can be described to hold in this free entity and to bind it from within it if and only if this entity can be descriptively identified with a mass in the absolute space and time. Such a free entity manifests a force within itself and by itself.

4.2.2.2.2. A mass in the absolute space and time ‘becomes’ a free entity if and only if it comes to coincide with the absolute space and time itself. A mass coincides with the absolute space and time itself if and only if it accelerates itself. A mass can accelerate itself if and

only if a force is innate to this mass. If a force is innate to a mass, then this mass is innately kinetic. An innately kinetic mass coincides with the absolute space and time because the conditionalization and coordination of the absolute time by the absolute space holds only in order to give rise to the acceleration of an entity in the state of inertia so that this entity can describe itself without contradicting the initial condition. If a mass can accelerates itself and forms its own space, then it can only have a finite velocity. This is so because a mass is necessarily finite in the absolute space and time. If a force is innate to a finite mass, then it can only be also finite and is proportional to that mass. This innate force constitutes the inertial mass and velocity of this finite mass. That is, this finite mass consists in and of its innate force and is descriptively identical with it. Therefore, this innate force accelerates itself. Such a self-acceleration can take place if and only if this innate force can be accelerated by itself while accelerating itself. This means that this innate force must transform itself into an inertial mass while accelerating itself. The meaning of this innate force lies in its being innately kinetic and therefore in its being least possible inertial. This means that this innate force has a necessity to attain the maximum possible self-acceleration. This innate force can attain such a self-acceleration by transforming itself into the minimum possible inertial mass and the maximum possible velocity. This innate force accelerates itself and is accelerated by itself. Therefore, its inertial mass and velocity are correlated with each other in such a way that an inertial mass increases in proportion to its velocity so that there comes a balancing point where an inertial mass becomes too large for its innate force to accelerate further. It is necessary for an inertial mass and its velocity to balance each other in this way because in order to be accelerated while accelerating itself this innate force has a self-imposed resistance to its accelerating itself. Such a resistance is inherent to the necessity of this innate force's accelerating itself and grows in proportion as this innate force accelerates itself more and more. This is so because the more this innate force accelerates itself, the more it has to be accelerated and therefore resisted. This also accounts for the wave-motion of a free entity. This balancing action of an innate force gives this innate force its maximum possible velocity. This self-imposed maximum limit of velocity of an innate force is the velocity of a free entity. Therefore, unlike in the absolute space and time, an inertial mass does not become infinitely smaller and give rise to a velocity which proportionally becomes infinitely larger. The product of the inertial mass and velocity of a free entity stands for 'energy'. 'Energy' is the descriptive manifestation of an innate force. A free entity is a system in which its finite energy is distributed in such a way as to form the minimum possible inertial mass and the maximum possible velocity. This is descriptively the purest form of energy. The necessary finiteness of an innate force stands for the 'quantum' of energy.

4.2.2.2.2.1. There is one and only one ideal amount of innate force. This is so because an innate force is also itself a gravitational mass and is subject to gravitation. A gravitational mass therefore descriptively consists in and of an inertial mass and its velocity and consequently appears to increase in proportion as an inertial mass increases in the process of self-acceleration. The larger an innate force is, the more it is gravitationally related with every other innate force and therefore becomes more inertial. This means that larger innate forces are more and more concentrated and become more and more inertial. Therefore, the smaller an innate force is, the larger maximum velocity it can attain. A free entity therefore can only be the smallest possible innate force.

4.2.2.2.2.2. The larger an innate force is, the less free it is from the absolute space and time. This is so because it is made more inertial by its gravitational relation with that concentrated region of gravitation and therefore has more inertial resistance to its own self-acceleration. A larger innate force therefore necessarily results in a larger inertial mass and a smaller velocity. This means that nothing can exceed the velocity of a free entity. If there is anything whose velocity exceeds that of a free entity, then its innate force can only be negative and therefore neither exists in the absolute space and time nor forms its own space. Such an entity is indescribable in the schema of physics. Therefore, if such an entity exists, then it can only be an entity that describes itself (i.e. FX).

4.2.2.2.2.3. The larger an innate force is, the more it is subject to gravitation. This means that larger inertial masses are more likely to attract, and to collide with, one another. Such collisions cause exchanges and emissions of energy and formations of complex systems. This is so because collided innate forces prevent each other from attaining their maximum possible velocity. This results in each innate force's not fully transforming itself into an inertial mass and a velocity. Such unused innate forces are emitted as new innate forces and/or held as a repelling force within the gravitational relation between or among those collided inertial masses. This is the reason why masses attract and, at the same time, repel one another. The rest of energy is made into the angular velocity of those collided masses by their gravitational relation. Therefore, a collision can cause two possible changes to collided innate forces :

i) innate forces collide with each other and transform each other into new innate forces by exchanging some of their energy while also emitting the rest of their energy as new innate forces,

ii) innate forces collide with each other, bind themselves by gravitation, and transform themselves into a complex system by exchanging some of their energy, while also emitting the rest of their energy as new innate forces.

In either way the totality of their energy is conserved because the totality of innate forces is inherently existent by its descriptive necessity and therefore can be neither created nor destroyed by any other means.

4.2.2.2.3. If there exists the maximum limit of velocity, then anything with this maximum velocity is a physically independent system ; for no energy can be externally transmitted to this system. This system also consists of a single inertial mass because such an anything can only be the smallest possible innate force. This system is therefore the system of a free entity and is also the most basic physical system in the sense that it is externally independent from every other system other than that of the absolute space and time itself. Every other system is either a complex system or a constituent of a complex system and exists only within the absolute space and time. That is, every one of them is in a gravitational relation with every other one and forms the totality of gravitation. The system of a free entity is in a gravitational relation only with this totality of gravitation, but not with constituents of this totality. This is so because any innate forces larger than the smallest possible one have their maximum velocity within that maximum limit. They can therefore have a medium among them and consequently can transmit energy among them. Systems of a free entity, however, can have no such medium. They are therefore free from any gravitational relations not only with those larger innate forces but also among themselves. They nevertheless have a gravitational relation with the totality of gravitation because the totality of gravitation stands for the absolute space and time itself. The absolute space and time itself holds within every system of a free entity. The totality of gravitation and every system of a free entity exist in each other in such a way that the latter is free in the former, but not to the former. This is so because while the former is one, and one only, there are an infinite number of the latter, which are independent from one another. This means that every one of the latter individually stands for the former and makes themselves collective. The meaning of this collective totality of the latter is the former. Within this collective totality systems of a free entity are not related with one another and therefore free and independent from one another, but not from this collective totality. They necessarily stay within this totality. The system of a free entity interacts only with the totality of gravitation.

4.2.2.2.3.1. Innate forces larger than the smallest possible one not only exist within the totality of gravitation, but are also not free and independent from one another. They exist in the absolute space and time, but are not existed in by the absolute space and time. They are necessarily under the influence of gravitation among themselves and are therefore made into parts of a body, which in turn becomes a part of a body of a higher order. This process continues until there comes to exist one and only one body which embodies the totality of gravitation. This totality of gravitation stands for the absolute

space and time itself and is also the cause of its self-imposed degeneration. Whatever that exists in the absolute space and time binds themselves together and forms this totality. The absolute space and time begins to degenerate from the very moment when they come into existence. The degenerating absolute space and time has the same boundary as the totality of gravitation. It is therefore finite and uniformly curved toward its centre. Whatever that exists in the absolute space and time exists within this boundary and can only have a finite velocity. Systems of a free entity stay within this boundary, but are free from any gravitational relations within this boundary. The velocity of a free entity not only stands for the maximum limit of velocity, but also remains constant, while every other inertial mass becomes more and more inertial. The absolute space and time descriptively starts with the necessity of the absolute space's not contradicting the initial condition, but physically starts with innate forces. This is so because it is self-imposed with the necessity that it recurs to an inertia system and therefore cannot remain infinite.

4.2.2.2.3.1.1. Within the absolute space and time the smallest possible innate forces are free and independent. This also means that they are invariant 'quanta'. The system of a free entity therefore gives rise to two invariants : one is its velocity, the other is its inertial mass. This inertial mass can also be a gravitational mass necessarily in its relation to the totality of gravitation. It gravitationally interacts only with this totality.

4.2.2.2.3.1.2. In the absolute space and time a force is described to be innate not to masses but to a single entity in the absolute space. This force is the descriptive necessity of this single entity's describing itself without contradicting the initial condition. By this necessity this single entity conditionalizes masses together with the absolute time and therefore does not exist within the absolute space and time. Consequently, given the absolute space and time, a force can only be described to be identically innate to every mass. Innate forces are the only necessary way of describing a force within the absolute space and time and descriptively integrate the physical cause of the absolute space and time with its descriptive cause.

4.2.2.2.3.1.2.1. The system of a free entity represents the purest form of energy. This is so because it is free from any gravitational relations other than that to the totality of gravitation and consists in and of the minimum inertial mass (i.e. the minimum resistance to a self-acceleration) and the maximum velocity. This means that it consists in energy which has the minimum conversion to a mass and the maximum conversion to a velocity. Energy is useful not as a mass but as a property of a mass. Therefore, the system of a free entity is also the most basic unit of kinetic energy and stands for the maximum possible conversion of a given innate force into a kinetic energy.

4.2.2.2.3.1.2.2. The meaning of such a unit lies not in its quantitative evaluation but in its being necessarily an invariant. The quantitative evaluation (i.e. the measurement) of such an invariant is tautological in the sense that the evaluation of any spatial and temporal quantities can only be based upon such an invariant. A measurement is the description of an invariant. An invariant is a descriptive necessity. Therefore, the validity of an invariant lies in a necessity for its conditionalization and can only be appreciated as a part of the demonstrative self-description of FX.

4.2.2.2.3.1.2.3. The physically real space and time holds between two inertia systems and infinitely recurs between them. It is also the process of the self-imposed degeneration of the absolute space and time. The absolute space has a single entity in it and is required by a descriptive necessity of this entity to conditionalize and coordinate the absolute time. In this absolute space and time that single entity manifests itself as an infinite number of identical momenta which internally infinitely vary in terms of the variation between an inertial mass and a velocity. This absolute space and time, however, does not have a physical continuity with that absolute space with a single entity and therefore gives rise to a necessity for such a continuity. This is possible if and only if that single entity is described within this absolute space and time.

This means that in this absolute space and time masses are related with one another in such a way as to form a single totality in the state of inertia. This causes the process of the self-degeneration of the absolute space and time. This degenerating absolute space and time is a spatio-temporal continuum in which a space and a time are related with each other in such a way that a time element gradually diminishes in proportion as masses are spatially more and more closely related with one another. A spatio-temporal continuum is therefore a space-time in which every mass other than free entities become more and more inertial, and which recursively holds between a descriptive inertia system and a physical one. These two inertia systems become identical when every mass is made into a single body (i.e. when the physical inertia system loses all its spatial and temporal elements) ; for without any spatial and temporal elements a physical inertia system is identical with a descriptive one. A spatio-temporal continuum therefore recurs in and between these two identifiable inertia systems.

4.2.2.2.3.1.2.3.1. In the absolute space and time masses are related with one another so as to become more and more inertial. This relation is gravitation. The necessity for gravitation is also the necessity for free entities. This is so because if that single entity in the absolute space must be described in the absolute space and time, then its descriptive necessity must also be described in the absolute space and time. They therefore complement each other in the absolute space and time. For this reason neither of gravitation and free entities holds without the other. On one hand, the existence of free entities makes it possible for energy to be transmitted among masses so that they can form a totality, on the other, the existence of gravitation gives rise to the necessity for the maximum limit of velocity in the absolute space and time.

4.2.2.2.3.1.2.3.2. A force is the necessity for an entity in the absolute space to conditionalize and coordinate the absolute time. An innate force therefore coincides with the absolute space and time itself if and only if it can give rise to an innately kinetic entity which is free from any gravitational relations other than that to the totality of gravitation. This is so because such an innately kinetic entity, in itself, embodies the absolute time. It is itself the absolute space and time of its own independently from a spatio-temporal continuum in which it exists. It is therefore free in a spatio-temporal continuum, but not from a spatio-temporal continuum. An entity which is a spatio-temporal continuum of its own in a spatio-temporal continuum, is confined in the latter continuum in such a way that it is not only free and independent from every other continuum and mass within that continuum, but also holds no spatio-temporal forms of mapping with that continuum. This is so because, on one hand, no energy can be transmitted to it within the latter continuum, on the other, it is required to remain constant by the very necessity for the latter continuum to degenerate into an inertia system. A free entity is therefore relativistic in the sense that it forms its own spatio-temporal continuum. Masses with a velocity sufficiently near the maximum limit become more and more inertial in proportion to their velocity. This is so because they come to form their own spatio-temporal continuum which is free and independent within the totality of gravitation. A mass with the maximum velocity is itself an inertia system and holds no time element. In the totality of gravitation masses become more and more inertial. The absolute space and time stands for such a process. Coinciding with the boundary of this totality of gravitation an absolute space becomes more and more confined, once gravitational relations become dominant over linear accelerations of masses. A time element diminishes in proportion as masses and bodies become more inertial. However, a mass which is free from such internal gravitational relations within the totality of gravitation, is also free from any spatio-temporal influences within that totality. Consequently, when a mass comes to have a velocity very near the maximum limit, it starts losing its spatio-temporal relation with the totality of gravitation and therefore comes to have no spatio-temporal location within the totality of gravitation. A mass with the maximum velocity cannot be

spatio-temporally located in the degenerating absolute space and time of this totality of gravitation. A mass with no spatio-temporal location is an inertia system because its motion spatio-temporally does not exist in a spatio-temporal continuum. The closer the velocity of a mass approaches to the maximum limit, the more inertial this mass becomes (i.e. the less time element it comes to have). A free entity has no time element and is itself an inertia system. When the velocity of a mass approaches the maximum limit, this mass comes to form its own spatio-temporal continuum in the same way as the totality of gravitation. It comes to be spatially more and more confined and comes have a less and less time element ; for it spatio-temporally banishes itself from the spatio-temporal continuum of the totality of gravitation in proportion to its velocity. This is the meaning of the spatio-temporal freedom and independence of a mass with the maximum velocity. A free entity is an inertia system and therefore has no spatio-temporal relations with any systems within the totality of gravitation and thus becomes relativistic. Consequently, two free entities cannot be described to be nearer to each other at time *t'* than time *t''*. The meaning of the measured velocity of a free entity is tautological. It only refers to a condition which can be measured against itself. The numerical value of such a measurement has no meaning of its own without assuming a spatio-temporal continuum which allows itself such a measurement to itself. That is, the measurement of an identical spatio-temporal interval between two events differs from one continuum to anther and only reflects the internal spatio-temporal structure of each continuum. The degenerating spatio-temporal continuum of the totality of gravitation, in this sense, consists of an immeasurable number of continuous but different continua. A free entity has no time element and therefore records no velocity to itself.

4.2.2.2.3.1.2.3.3. Free entities are free and independent within the totality of gravitation. The totality of gravitation becomes more and more inertial. This means that it becomes spatially more and more confined and comes to have a less and less time element. Free entities remain free and independent, but are necessarily confined within the totality of gravitation. They are therefore free and independent within the totality which is spatio-temporally ever-contracting. When this totality becomes a single body in the state of inertia, it contains such free entities. Free entities, however, cannot stay free and independent within a body which has no spatio-temporal element. Consequently, the final stage of contraction of the totality of gravitation contradicts the necessary existence of free entities and is therefore self-imposed with a necessity to expand again. This final stage is therefore identical with the centreless Euclidean 3-dimensional space with one and only one entity and lasts extra-spatio-temporally. The physical spatio-temporal continuum therefore infinitely recurs between two identical inertia systems by its own necessity. This is the 4-dimension.

4.2.2.2.3.1.2.3.4. This recursiveness is due to gravitation and free entities. They are therefore the most fundamental driving force of the above recursive process. The absolute space and time degenerates and induces a relativistic space and time because of gravitation. The existence of gravitation simultaneously gives rise to the necessity for the maximum limit of velocity. Masses with the maximum velocity are free and independent within the totality of gravitation and therefore contradict the meaning of gravitation at the final stage of gravitational contraction. This induces an expansion and therefore recursively repeats the whole process again. Space and time are therefore necessarily associated with gravitation. Gravitation is a necessity among masses to form a single body in the state of inertia. Gravitation therefore exists only where there are masses. This also means that space and time exist only where there are masses. Therefore, the world is the recursive totality of gravitation. Within this totality space and time form a continuum which continuously changes in the course of gravitational contraction. More and more masses are concentrated toward the centre of this continuum because larger masses exist toward the centre. The contraction of

masses causes a more and more confined space and a less and less time element ; for the state of masses becomes nearer and nearer to a single inertia system. For the same reason a mass comes to have a more and more confined space and a less and less time element when its velocity approaches the maximum limit. A larger inertial mass means a smaller velocity. This also means more and more larger inertial masses exist toward the centre of this continuum. An inertial mass and a gravitational mass are identical because gravitation makes masses larger toward the centre. Gravitation holds only among masses. Therefore, the world is a closed system and holds the conservation of energy. It is closed in such a way that it is curved toward where there are more masses. Therefore, the natural motion of a self-accelerating mass is necessarily a curved one. That is, a ‘curve’ is spatio-temporally a straight line in this world.

4.2.2.2.3.1.2.3.5. The absolute space and time necessarily degenerates and becomes a spatio-temporal continuum. The physically real space and time is this continuum which recursively repeats itself between two identical inertia systems. The extra-physical (i.e. descriptive) absolute space and time nevertheless holds because gravitation can be at work if and only if masses are conditionalized. Masses, however, cannot be conditionalized unless an inertia system holds in the centreless Euclidean 3-dimensional space. This is so because an entity or body in the state of inertia can conditionalize masses if and only if it is already made possible for this entity or body to be able to move before it actually starts accelerating itself. The extra-physical absolute space and time therefore holds only descriptively. It cannot be physically real because as soon as masses come into existence, gravitation is already at work. The degenerating absolute space and time (i.e. a spatio-temporal continuum) is approximately identical with this extra-physical absolute space and time when it is concerned with the description of masses and bodies with a small velocity. This is so because the total amount of energy of a mass or body with a small velocity is approximately identical with that of an inertial mass.

4.2.2.2.3.1.2.3.6. A singularity is the way by which a free entity appears to everything else but itself. This is so because a free entity cannot be located in a spatio-temporal continuum of the totality of gravitation. Therefore, the nearer the velocity of a mass approaches to the maximum, the more it spatio-temporally appears singular. The motion of a mass with a large velocity can only be dealt with probabilistically. That is, the description of the motion of such a mass is inherently subject to the degree of approximation which an ever-degenerating spatio-temporal continuum can attain in order to internally measure itself against itself. The internal measurement of a continuum can only be approximate because, on one hand, this continuum can only gather information about itself by the medium of masses with a large velocity, on the other, it is itself ever-degenerating. The motion of a mass with a large velocity can only be described approximately and probabilistically because, on one hand, masses with a large velocity appear inherently singular to this continuum, on the other, no information can be given by a single mass. This singularity, however, can be described because masses become singular only in proportion as their velocity increases. This means that while the schema of physics can be precise, any internal descriptions within this schema can only be approximate.

4.2.2.2.3.1.2.3.7. Dimensions are conditionalized by descriptive necessities. Descriptive necessities are extra-physical. Therefore, the 4-dimension (i.e. physical dimension) holds if and only if every other dimension (i.e. geometrical dimensions) holds simultaneously. Every dimension is descriptively coexistent. Entities of physics also can only be descriptive entities subject to various schemata of physics.

III - v. Schema of Arithmetic

2'. The 4-dimension is self-descriptively complete and therefore gives rise to no descriptive

necessity to conditionalize any further dimensions. The completeness of the 4-dimension can be seen in the recursiveness of the 4-dimension. The 4-dimension is made to infinitely recur by the spatio-temporal incompatibility between gravitation and free entities. That is, this incompatibility can make itself compatible only by spatio-temporally recycling itself. Everything in the 4-dimension is either a gravitational mass or a free entity. Therefore, in this recursive 4-dimension nothing remains undescribed or indescribable. The 4-dimension is a self-contained, recursive field of space-time which manifests both absolute and relativistic features in it. The 4-dimension does not necessitate any further dimensions and is therefore the last one. Whatever that can be described, can be found in the schema of logic or in subsequently conditionalized dimensions. That is, every other schema can be derived from those schemata and therefore eventually from the schema of logic. A derivative schema is therefore, if it is not logical, either geometrical or physical. The schema of arithmetic is a derivative schema and is geometrical. The theory of numbers is therefore founded upon the schema of geometry. The meaning of a number is necessarily geometrical.

2'.1. Numbers are found in the 2-dimension. Numbers are the description of 2-dimensional geometrical properties. A type of numbers stands for a geometrical property, while a number refers to the descriptive form of a geometrical property. A number is a value of a set of variables which satisfy the descriptive form of a certain geometrical property and therefore has no meaning of its own without a totality in which it exists. A number is applicable to anything if and only if a totality in which it exists, is schematically applicable to a totality to which this anything belongs. Therefore, a number is not applicable to anything which is not schematic.

2'.2. A geometrical property relates to other geometrical properties. This is reflected in the way by which a type of numbers relates to other types of numbers. Only types of numbers, and not numbers themselves, can be described that some are more fundamental than others. Type I and II spaces have some common geometrical properties. Types of numbers which are based upon such common properties, are therefore common to both types of space. None of them is more fundamental than the others because these properties underlie one another. There are other types of numbers which are based upon a geometrical property of either type of space alone. These types are less fundamental than those which are common to both types of space, and can only be based upon the latter. This is so because the difference between Type I and II spaces can only be described based upon their identity. Some geometrical properties are more fundamental than others. However, every geometrical property is necessary. Therefore, some properties' fundamentality over others only reflects a descriptive order of conditionalization and does not mean that a less fundamental one can be constructed by them. Every type of numbers is equally necessary and unique. Not every numerical relation within a more fundamental type of numbers can find a numerical value within that type and therefore gives rise to a necessity to generate a type of numbers such that can give a numerical value to every numerical relation in that more fundamental type of numbers. Such a necessity cannot be constructed, but can only be construed. This is parallel to the way by which a conditionalization proceeds. A less fundamental type of numbers is therefore not constructed by more fundamental types, but generated by a necessity in order to describe what cannot be described in and by existing types. A number of one type relates to a number of another in such a way as to reflect a descriptive necessity which holds between these two types. Therefore, a less fundamental type can only be supplementary to a more fundamental type.

2'.3. Within the 2-dimension the following geometrical properties can be found :

(I) Type I and II spaces are both (I-i) recursive, (I-ii) symmetrical and (I-iii) infinitely divisible.

(II) Type II space (II-i) forms a coordinate and (II-ii) derives a fictitious space, which can also be derived from Type I space.

(I-i), (I-ii) and (I-iii) are common to both types of space because they are the 2-dimensional description of the 1-dimension, which is identically common to both types of space. The 1-dimension is 2-dimensionally described, on one hand, as the boundary of Type I space, on

the other, as the x-y axes of Type II space. (I-i), (I-ii) and (I-iii) also underlie one another because the 1-dimension cannot be reduced into parts in any dimensions other than the 1-dimension and therefore manifests itself as a whole. Only Type II space can have a geometrical property which is not shared by both types of space. This is so because Type I space has no spatial substances other than its boundary itself and therefore has no geometrically spatial properties other than those mentioned above. Type II space, on the other hand, has spatial substances which can be represented in terms of a relation between its two axes. Type II space therefore numerically contains Type I space. This is also the reason why the derivative space of Type II space is, despite of its identity with that of Type I space, taken as a geometrical property which gives rise to a type of numbers.

2'.3.1. (I-i) Type I space is recursive because it is closed in such a way that any points of its boundary can be a starting-point as well as, at the same time, an ending-point between which the 1-dimension is 2-dimensionally described. Type I space manifests itself as the boundary of its own. This boundary is formed by a descriptive space which becomes boundlessly and uniformly denser away from its centre. This boundary therefore consists of boundlessly dense points. Points are described to be boundlessly dense if and only if they are dense at their limit. At their limit no points can be distinguished from any other point. A ‘limit’ is such that a point which can be so distinguished at a stage before, becomes indistinguishable from any other point and therefore becomes distinguishable indeed as any points. Consequently, a recursiveness is a property of a point such that becomes indistinguishable and therefore becomes distinguishable as a point which becomes indistinguishable. That is, a starting-point is indeed an ending-point if and only if every point comes to be identical with one another by becoming so boundlessly and uniformly dense that none of them can be spatially differentiative from any other. Only on this basis it does not make sense to identify a point in terms of a starting-point or an ending-point. This boundary is therefore also closed because every point is identical with every other point and becomes a single totality. Such an identity recursively carries a point on and along this boundary (i.e. Type I space) in such a way that if it should be distinguishable, then it is distinguishable only as a point which becomes indistinguishable by becoming identical with every other point. A uniformly closed space therefore recurs as many times as there are points on its boundary (i.e. boundlessly in the sense of the limit of the countability). In no matter what order it may recur, it results in an identical sequence of recursive numbers. This is so because the identity of a point lies in every other point. Type II space is recursive because it consists of points every one of which is a center. Whichever point is taken as the centre, Type II space remains identical. The centre of Type II space is therefore transpositional to any points in Type II space and results in an identical Type II space. This means that Type II space describes itself identically at every centre and therefore infinitely recurs. The meaning of the centre stands for this recursiveness because the centre can represent every point by its transpositionability. The centre is made transpositional by its two determinant intersecting 1-dimensions. This is so because in Type II space every 1-dimension is identically intersectible by other 1-dimensions and therefore consists of an infinite number of uniformly dense points. If two of such 1-dimensions intersect each other and determine a space and its centre between them, then every point in this space can be determined by the spatial relation between these two 1-dimensions. Consequently, the transpositionability of the centre lies in such two determinant intersecting 1-dimensions. That is, the recursiveness of Type II space is represented by every point which constitutes these two determinant 1-dimensions.

2'.3.1.1. ‘(0, n, n+1)’ is the descriptive form of the recursiveness. ‘Natural numbers’ are formed by its values. A point stands for a natural number. In Type I space a point can be distinguished as an indistinguishable point (i.e. as the single totality of the boundary of this space). Consequently, it distinguishes itself as an indistinguishable self as many times as there are points on this boundary. A point is ‘0’ if and only if it is taken as the starting-point of this distinguishability. ‘n’ is a point which is distinguishable as any points. ‘n+1’ is every point and therefore stands for all points on the boundary of this uniformly closed space. Therefore, ‘n+1’ become boundless. (0, n, n+1) is recursive because any points can be this starting-point, which distinguishes itself as an indistinguishable point by identifying itself with and in terms of every other point. That is,

to every point there is a ‘successor’ because every point is made identical with one another by every point’s identifying itself with every other point. This is made possible by any points’ initially distinguishing itself as an indistinguishable point. Once such a point is given, then it identifies itself with such an itself recursively. Once given a ‘0’, a number stands for such a self-identity by means of a recurrence. The number of numbers is therefore the number of possible recurrences, which is the number of points that form the boundlessly dense boundary of Type I space at their limit. The most primitive form of such a recursive system is the binary system. In Type II space points which constitute the x-y axes, can determine every other point. Type II space therefore recurs if and only if the centre recurs at every point which constitute the x-y axes. ‘0’ stands for such a centre. ‘n’ is any points on the x-y axes. These points are related to one another in such a way as to indicate a 1-dimensional direction. This is so because Type II space is dynamically expanding. ‘n+1’ stands for such a relation. Therefore, ‘0’ recurs from one point to another so as to comply with such an infinite expansion of this space.

2'.3.1.1.1. If a sequence of ‘natural numbers’ is formed by any values which satisfy (0, n, n+1), then it can be said that there could be a sequence which, for example, starts from ‘3’ instead of ‘0’, and therefore that the meaning of every number in the former sequence would differ from that of equivalent numbers in the latter sequence. However, this is possible if and only if it is already known how these two sequences correspond to each other. In order for this to be possible the meaning of each sequence must be already known on its own account. This means that it is purely a matter of agreement to choose either of them as a standard convention. This is so because both sequences stand for identical ‘natural numbers’. ‘3’ may mean ‘0’ if and only if it is schematically so agreed. ‘Natural numbers’ are applicable if and only if they are accepted as a totality. Once a certain sequence of ‘natural numbers’ is accepted as a totality, there can be no necessity to have another. That is, the use of ‘natural numbers’ is self-restricted by the identical meaning of every possible totality of ‘natural numbers’. Therefore, it is against the initial condition to make a same ordering or ordering of groups by using two different sequences of ‘natural numbers’ unless it is already known that one is taken as a standard convention.

2'.3.1.1.1.1. The totality of natural numbers is only applicable to ‘things’ because an ordering or ordering of groups can only be made from a totality of units. This also means that the recursiveness can only be found among units. A unit is meaningless on its own in the same sense that a number is meaningless without a totality. The meaning of a unit lies in its relation to every other unit. A unit is anything which has no meaning of its own and depends upon one another in order to be meaningful. The values of (0, n, n+1) can only be units. Units exist only in a space or space-time. This is so because while the logical space deals with the internal structure of an entity, dimensions deal with the existence (i.e. external structure) of an entity. The meaning of a unit in a space or space-time therefore lies in its external relations to other units. These external relations are spatial, spatial and temporal or spatio-temporal relations. In a space natural numbers are therefore applicable by means of distances and directions. Distances and directions give rise to standpoints from any one of which a same sequence of ‘natural numbers’ holds. Therefore, a sequence of natural numbers can represent every such a sequence. If a time element is added, it is simply a sequence of sequences of natural numbers. Natural numbers are, however, not applicable to free entities because they only relate to one another relativistically. The describability of natural numbers is confined to the making of an ordering or ordering of groups among units. Transfinite numbers not applicable in a space or space-time because the totality of a space or space-time cannot be described within that totality by any means other than the recursiveness.

2'.3.1.1.1.1.1. In the ordinary language natural numbers make sense if and only if the ordinary language assumes the schema of a space or space-time. However, one of the most fundamental characteristics of the ordinary language is its inaccuracy. The ordinary language is not a schema but a ‘melting-pot’ of inaccurate knowledge and superstitions based upon ‘values of life’. The use of the ordinary language is

confined purely within superficial communications between or among inaccurately and poorly programmed ‘machines’ and is therefore utterly irrelevant to the description and understanding of the ‘world’ (i.e. FX and its conditionalizations).

2'.3.2. (I-ii) Type I space is symmetrical. This is so because Type I space becomes boundlessly and uniformly denser away from its only centre so as to form its own boundary. This space is therefore uniformly closed and is symmetrical. Every point of this boundary is a starting-point as well as, at the same time, an ending-point, of a recurrence. Consequently, a set of two and only two unilateral relations of this recurrence holds in and between a same point. That is, this recursiveness is twofold. If it occurs once, then it may occur the other way around at and from a same point. It may start at where it ends and therefore ends at where it starts, and vice versa. Therefore, natural numbers are also twofold. Type II space is also symmetrical because it is determined by two 1-dimensions which intersect each other in such a way as to manifest the uniform density of this space. These two determinant intersecting 1-dimensions therefore relate to each other perpendicularly and becomes the x-y axes. Each axis therefore consists of two totalities of natural numbers. In terms of this symmetry in Type I and II spaces the totality of natural numbers can have two and only two identical selves. Such two identical selves of an identical totality can be described because they necessarily share one and only one point. This point is the point which recurs and gives rise to natural numbers. ‘0’ is such a point. ‘0’ is therefore shared by two identical totalities of natural numbers and infinitely recurs within each totality. The totality of such two totalities of natural numbers is ‘integral numbers’. ‘Integral numbers’ are therefore natural numbers in the descriptive form of symmetry. Natural numbers are designated by means of ‘+’ and ‘−’ in this form. The meaning of ‘+’ and ‘−’ lies in the twofoldness of an identical totalities. ‘+’ and ‘−’ are therefore identical with each other if they are not related.

2'.3.2.1. Integral numbers are applicable whenever the recursiveness and symmetry are applicable. The two identical constituents of integral numbers are related to each other in such a way that each constituent, while sharing ‘0’, forms a totality of its own. Within each totality, if it is applied, as is in natural numbers, an ordering or ordering of groups, of units, holds. In an ordering of groups comparisons of ‘quantities’ hold. A ‘quantity’ is a group of units and may be null. It is found in a space or space-time and is based upon a certain spatial, spatial and temporal or spatio-temporal relation (i.e. a geometrical figure or solid, a physical body or system). These relations demarcate a quantity from other quantities. A quantity, however, cannot be found in a free entity despite of its being the most fundamental quantum. This is so because a free entity is relativistic and is incomparable. Quantities can be compared because they are finite totalities of units which are countable by means of an identical form of ordering (i.e. a finite sequence of natural numbers). A cardinal number is a form of ordering and therefore follows from an ordinal number. Quantities are more intimate to one another within a same totality of natural numbers than between two different totalities ; for each totality of natural numbers is a totality of its own. Therefore, there are two and only two ways of comparison of quantities ; one is purely within a same totality, the other is between two totalities. Quantities are ‘additively comparable’ by intimacy if they are within a same totality. That is, they are, out of themselves, to form a totality which complies with the identity of a totality to which they both belong. Quantities are ‘subtractively comparable’ by unifiability if they belong to two different totalities. That is, they are, out of each other, to form a totality which complies with the necessity of every totality’s belonging to either of those two infinite totalities. An additive comparison holds as a necessary relation between two different totalities of natural numbers. This is so because such two infinite totalities are, seen from a finite point of view, so distinguishable only by an intimacy among finite totalities within each infinite totality. Subtractive comparisons are made possible by ‘0’. This is so because ‘0’ is the only number which is shared by both infinite totalities, and makes two such infinite totalities a single unified totality. Therefore, whatever that belongs to this unified totality, necessarily belongs to either of those two totalities. A subtractive comparison may result in ‘0’ because ‘0’ belongs to both of those two totalities. From this it follows that

(i) given two quantities of a same infinite totality, they are a totality in this same infinite totality,

(ii) given two quantities of two different infinite totalities, in and between them there is a totality (i.e. including ‘0’) which belong to either of those two infinite totalities.

Quantities are additively or subtractively comparable essentially between two quantities ; for comparisons of two quantities can constitute any complex comparisons. Consequently, two quantities are the base unit of a comparison. There is no ordering between two forms of ordering because they do not exist in a space or space-time. This means that two quantities are additively or subtractively comparable in such a way as one with the other, or vice versa. Nevertheless there can be additively or subtractively one and only one totality out of two quantities. This is so because there is one and only one type of intimacy or unifiability. Consequently, a comparison is additively or subtractively unilateral and twofold and gives rise to an identical finite totality in either way. The relation which holds in and between two such identical finite totalities is the ‘equality’ in their quantity. Two quantities are therefore ‘equal’ if and only if they consist of identical constituents, whose additive or subtractive comparison is always unilateral and twofold. From this it also follows that if a quantity consists of more than two quantities, then those constituents are additively or subtractively comparable and freely associative and yet result in an identical totality. This is so because an additive or subtractive comparison is a unilateral operation. Therefore, in so far as associations do not violate this unilateralness, they do not make any difference in additively or subtractively comparing quantities.

2'.3.2.2. ‘0’ is described as the starting-point of a recurrence. However, ‘0’ is not the starting-point of an ordering or ordering of groups, of units. This is so because the starting-point of a recurrence can only be assumed by the starting-point of an ordering. ‘0’ is the unit of recurrence and underlies whatever that is recursive. It stands for the meaning of a unit. Natural numbers are only applied to ‘things’ and are not found in ‘things’. Therefore, if and only if ‘things’ are units, then they are all identical with ‘0’, which recurs and reproduces natural numbers in and among units. ‘Things’ can be units if and only if they ‘exist’ and have no self-identity. Units are therefore in a space or space-time and are unanimously identical with one another in the sense that they can only externally relate to one another. A unit has no self-identity because the meaning of a unit lies not in itself but in the way by which it exists in a space or space-time. The 2-dimension determines the meaning of a unit because it is the descriptive basis of the 3- and 4-dimensions. A ‘unit’ therefore exists only in the 2-dimension and manifests itself as every point on the boundary of Type I space and as the centre of Type II space. In other dimensions only units exist. A unit does not exist without a ‘unit’. A ‘unit’, however, cannot exist in any ways other than it does in Type I and II spaces. This is the meaning of ‘0’. If a ‘unit’ is the meaning of a unit, then it refers to the totality of units. Only in this totality a unit is meaningful. In a space or space-time ‘things’ exist only as a totality because their meaning lies in their external relations. This means that there exists no single ‘thing’ to which ‘0’ is applicable on its own. A ‘unit’ is not a ‘thing’ but the totality of ‘things’. A ‘unit’ therefore can only be assumed by every ‘thing’ if and only if they have a totality. This accounts for the reason why there may be ‘one thing’, but not a ‘null-thing’ in a space or space-time. Type I and II spaces give rise to the meaning of a unit because they are the space of the totality of a ‘thing’. That is, on one hand, every point in Type I space merges into a single totality by becoming indistinguishable from every other point, on the other, the centre of Type II space is descriptively the sole substance in that space. ‘0’ therefore can only be described in Type I and II spaces. In every other space it can only be assumed as the basis of a unit. Consequently, an ordering or ordering of groups, of units, only assumes ‘0’. ‘0’ is always assumed by every natural number and every type of numbers which is based upon natural numbers. As an integral number ‘0’ is a quantity with no units and is shared by both totalities of natural numbers. Consequently, ‘0’ is equally intimate to every number of both totalities. From this it follows that

(i) no additive or subtractive comparisons of 0’s hold (i.e. every comparison of 0’s results in 0),

(ii) an additive or subtractive comparison of 0 with any other numbers results in that

number which is so compared, for the same reason that 0 cannot be additively or subtractively compared.

2'.3.2.2.1. Quantities other than 0 consist of a unit or units. The minimum of such quantities is additively or subtractively the descriptive basis of every number other than 0. This is so because every number other than 0 can be constructed from such a minimum quantity by means of additive or subtractive comparisons. A quantity with no units, however, cannot be constructed by the subtractive comparison of this minimum quantity ; for every subtractive comparison assumes this quantity with no units. This minimum quantity is a quantity with only a unit and is the successor of 0. Such a quantity is +1 and −1. Both infinite totalities of natural numbers can be, assuming 0, constructed respectively from +1 and −1 by means of additive comparisons.

2'.3.2.2.2. Within a group of n units there are n! possible orderings. However, their form of ordering remains identical because units are all identical in their meaning. Such as distances and directions are only external to this identical meaning of units and therefore bear no influence on the way by which an ordering is made among units. Consequently, units are identically countable in a group. That is, their form of ordering remains identical whichever unit is taken as the starting-point of an ordering.

2'.3.3. (I-iii) The boundary of Type I space consists of a boundless number of points which are densest at their limit. This means that such points are related to one another in such a way that between any two points there necessarily exists at least one point. This is so because this boundary is a single totality and therefore does not contain a space between points. The x-y axes of Type II space are also infinitely and uniformly dense and therefore consists of points which are related to one another in the same way as above. This is so because a point is conditionalized by two intersecting 1-dimensions, neither of which has any width. Even a portion of a 1-dimension is therefore intersectible by an infinite number of 1-dimensions. Consequently, a point can only occupy an infinitesimal portion of space. This means that between any two succeeding natural numbers there exists an infinite divisibility. That is, this infinite divisibility between two identical recurring points stands for the spatial magnitude of a point. The magnitude of a point can only be relatively determined. This is so because the meaning of a point is necessarily relational and therefore underlies that of every other point. This also means that a point cannot be described to have a size if it is on its own. An ordinal natural number is therefore marked by a point whose magnitude is only relatively determinant. A relatively determinant point is, however, not itself divisible and therefore stands for the unit of the infinite divisibility. It can therefore be a unit which constitutes a quantity. The infinite divisibility of a cardinal number therefore stands for not any divisibility of a unit but the descriptive form of the relatively determinant magnitude of a unit. That is, a cardinal number is infinitely divisible so as to descriptively manifest the magnitude of a unit which is the basic constituent of a quantity referred by that number. The meaning of a division of a cardinal number therefore lies not in itself but in its relativeness to every other division. A fraction is itself only a relative quantity and is meaningless on its own. The quantity of a division can only be described in its association with natural numbers and therefore essentially with additive comparisons of +1 or −1. it is for this reason that if a natural number is infinitely divided, then that number comes only as the limit of the additive comparison of that number’s infinitely divided selves. That is, a natural number and the additive comparison of its infinitely divided selves are not equal but only approximately associative unilaterally from the former to the latter. This is the meaning of a limit. Integral numbers are the unified totality of two totalities of natural numbers. Therefore, if the infinite divisibility holds between natural numbers, it also holds between integral numbers. Integral numbers with this infinite divisibility constitute ‘rational numbers’. An identical and infinite number of rational numbers holds between any two succeeding integral numbers. In an infinite totality a part is therefore equal to a whole. Every rational numbers can be presented as a ratio associated with the magnitudes of integral numbers and is called a fraction. A rational number is always a fraction of an integral number.

2'.3.3.1. A rational number consists of an integral number and its divisor, which is any natural

numbers. The magnitude of a rational number lies in its association with an integral number. Therefore, a rational number is equal to an additive comparison of an integral number and any divisions which hold between 0 and +1 or 0 and −1. This is so because between any two succeeding integral numbers an identical infinite divisibility holds. Between 0 and +1 and also between 0 and −1 this infinite divisibility holds in such a way that it is always a division of +1 and −1 ; for if an infinite divisibility stands for the manifestation of the magnitude of a unit, then a quantity with no units has no such divisibility. This means that any divisions of 0 remains 0. The meaning of a division lies in progression. The divisions of +1 and −1 progress infinitely toward 0, as divisors increase infinitely in their magnitude. This progression is necessary because the possibility of a division implies the possibility of every other division. From such progressive divisions of +1 and −1 +1 and −1 must be constructed by an additive comparison of those divisions. However, this is not possible by means of an additive comparison if the magnitude of a divisor becomes infinitely large. The meaning of a ‘multiplication’ lies not in its being a shorthand of an additive comparison but in its being able to make an additive comparison possible without actually enumerating what is to be additively compared. That is, a ‘multiplication’ means the inverse of a division (i.e. the totality of whatever that is divisible) and is therefore applicable to any rational numbers. However, the sense of a ‘multiplication’ remains identical with that of an additive comparison. A multiplication is therefore commutative and associative. Any multiplications by 0 or of 0 remain 0 ; for 0 is not divisible. Any multiplications by +1 or −1 or of +1 or −1 are equal to a number which is so multiplied or multiples ; for +1 and −1 are the unit of units. On one hand, they are the unit of divisions, on the other, they are the unit of quantities. Any multiplications of a negative number by a negative number result in a positive number. This is so because every number other than 0 is necessarily either positive or negative. This means that if a negative totality is divided into a negative integral number and a divisor, which is positive, then by the sense of a multiplication as a shorthand of an additive comparison this same negative totality cannot be divided into two negative constituents. This only leaves the necessity that a multiplication of two negative constituents results in a positive totality, in the sense that, otherwise, there can be no difference between positiveness and negativeness. An additive or subtractive comparison of two multiplications is identical with the multiplication of a common constituent of those two multiplications by the additive or subtractive comparison of what is left of those two multiplications. This is so because while an additive or subtractive comparison holds unilaterally between or among two or more totalities, a multiplication holds in a same totality.

2'.3.4. Three types of numbers are generated based upon geometrical properties which are common to Type I and II spaces. Type II space differs from Type I space in the sense that it is not empty. Type II space is descriptively presented by two perpendicularly intersecting lines (i.e. the x-y axes) which consist of points and extend infinitely. The x-y axes represent and embody every number so far generated. Positive and negative rational numbers embrace the meaning of natural and integral numbers. This is so because, on one hand, natural numbers are incorporated into integral numbers, on the other, rational numbers assume integral numbers in the sense that an infinite divisibility holds between any two succeeding integral numbers. Consequently, the x-y axes manifest themselves as two intersecting sequences of rational numbers. Everything in Type II space can be described by means of numerical representations of spatial relations which hold between the x-y axes. The two sequences of rational numbers intersect each other in such a way as to represent each other’s symmetry. Therefore, their intersection holds at ‘0’. ‘0’ is also the centre of Type II space. Every point in Type II space can be represented by a pair of rational numbers, each from each sequence. However this, within itself, holds an indescribable. That is, while the area of a square can be described by a rational number, not every number which give rise to this numerical value of the area of a square, can be represented by a rational number. Such numbers are ‘irrational numbers’. ‘Irrational numbers’ therefore refer to a certain spatial relation between two intersecting sequences of rational numbers. These two sequences of rational numbers have a geometrical necessity to intersect each other and to spatially relate to each other. This necessity is, however, not embraced by geometrical properties which give rise to natural, integral and rational numbers. ‘Irrational numbers’ are the description of this necessity and therefore cannot be located on a sequence of rational numbers. This is the

reason why the solution of quadratic equations results in square roots which are in general not rational. ‘Irrational numbers’ hold between two spatially related sequences of rational numbers and therefore can only be described as ‘gaps’ on a sequence of rational numbers. Such a ‘gap’ is only ‘pointed at’ as what exists between the upper limit and lower limit of two infinite, regular sequences of rational numbers which have an identical limit by infinitely converging toward this limit from opposite directions on an identical sequence of rational numbers. Positive and negative rational numbers together with such ‘gaps’ constitute ‘real numbers’.

2'.3.4.1. Mathematical dimensions extend to n without any geometrical necessities. Therefore, irrational numbers are not confined to square roots.

2'.3.5. Type I and II spaces derive a common fictitious space by contradicting themselves from within themselves. This derived space is fictitious and, on its own account, serves no descriptive purposes other than its own mere fictitious existence. However, in its relation to Type I and II spaces it describes that these two types of space are related, in a way other than that in terms of the transcendence, to each other in such a way that they are identical if and only if they assume themselves contrary to their own fundamental characteristics. This derived space, however, can only be given by Type II space when numbers are concerned. This is so because in numerical terms Type I space is contained in Type II space. Rational numbers are represented in Type II space in such a way as to generate a new type of numbers, while they remain on their own in Type I space. Therefore, on one hand, Type I space is included in Type II space in terms of the applicability of numbers, on the other, they are identical in terms of the meaning of numbers. This is so because irrational numbers hold as a spatial relation between two intersecting sequences of rational numbers and therefore need not materialize themselves as arithmetical entities. If Type II space is identical with Type I space in such a way as to encompass it without differing from it in meaning, then that fictitious space is numerically described to be derived only from Type II space.

2'.3.5.1. This derived space is fictitious and is therefore not necessitated by itself. The necessity for this derived space lies in the possibility of assuming a space contrary to its fundamental characteristics. A space can assume itself contrary to its own characteristics if and only if such an assumption is not partial and therefore leads itself to a new, independent space. A space and its derived fictitious space are related to each other in the same way as T and F ; for their meaning lies in each other’s existence and is, in itself, identical. The only difference is that, unlike T and F, this fictitious space has no descriptive necessity of its own and therefore can only be initiated by Type I or II space. This space is not the description of something which cannot be described in Type I or II space. Consequently, the necessity for this fictitious space is not direct and is therefore not geometrical. This fictitious space is therefore not a conditionalized space but an internal self-description of Type I or II space. Therefore, the geometrical properties of this fictitious space can only be identical with those of Type I or II space in such a way that they are the supposition of an adversative to the latter, based upon the given meaning of the latter. In terms of a numerical applicability this fictitious space can only be derived from Type II space ; for Type II space is identical with Type I space, but has a wider numerical applicability. What makes Type II space geometrically differ from Type I space is numerically represented as irrational numbers. This means that the supposition of Type II space contrary to its fundamental characteristics, is identical with the supposition of an adversative to the describability of irrational numbers. That is, if irrational numbers assume themselves contrary to themselves, then it results in an adversative such that cannot be described by irrational numbers, but is based upon the meaning of irrational numbers.

2'.3.5.2. Irrational numbers can be described essentially as positive or negative square roots of positive rational numbers. This is so because they are, if squared, necessarily positive in accordance with the meaning of the multiplication of a same number. Consequently, the adversative in the meaning of irrational numbers lies in numbers such that are, if squared, not positive but negative. Such numbers cannot be described by irrational numbers, but are based upon their meaning. These numbers are ‘imaginary numbers’ and are positive or

negative square roots of negative rational numbers. This means that an imaginary number is the multiplication of a positive or negative real number and the positive square root of −1. This positive square root of −1 is therefore the unit of imaginary numbers.

2'.3.5.2.1. Imaginary numbers therefore form a sequence, which is symmetrical, infinitely divisible and extends infinitely. This sequence, however, cannot be represented in Type II space ; for no real numbers can describe imaginary numbers, and vice versa. Imaginary numbers differ from every other type of numbers so far generated. Every other type of numbers relate to one another in such a way that the meaning of a preceding type is always included in a newly generated type. However, this does not apply to imaginary numbers because imaginary numbers are specifically designed so as to be contrary to the meaning of existing types of numbers. Imaginary numbers are, however, related to real numbers in such a way that once given, they coexist with real numbers. This is so because their meaning lies in each other's existence and is, in themselves, identical. This coexistence is therefore the numerical manifestation of the relation between Type I or II space and their common derivative space. If real numbers and imaginary numbers coexist, then a sequence of real numbers and that of imaginary numbers have a one-one correspondence between them ; for both sequences are symmetrical, infinitely divisible and extends infinitely. This one-one correspondence necessarily complies with the symmetry of each sequence and is therefore twofold. A twofold, symmetrical one-one correspondence has a point at which its symmetry can be described to hold. This is parallel to two intersecting sequences. That is, by their twofold, symmetrical one-one correspondence a sequence of real numbers and that of imaginary numbers can be described to intersect each other and to determine a space between them. Such a space is the space of 'complex numbers'. A 'complex number' stand for a point which can be determined by a one-one correspondence between such two intersecting sequences. The unit of imaginary numbers can only be described in this space of complex numbers and results in the numerical manifestation of that derived, fictitious space, which is finite, uniform and closed. If this unit is negative, a same description still holds, but now becomes twofold. The space of complex numbers is a space in which Type II space and its derived space numerically coexist in such a way as to show the derivability of the latter from the former. The latter is therefore not presented in this space, but can only be described in it. Complex numbers numerically represent the form of derivability in the sense that they can describe that derived, fictitious space, based upon the numerically processed Type II space. Complex numbers are applicable whenever the form of derivability holds. The space of complex numbers is the space of derivability.

2'.3.5.2.1.1. The form of derivability, for example, holds in time. This is so because time is derived from space and from within space by an adversative generated from within space. Complex numbers are therefore applicable in the description of time. Time is represented in the description of the unit of imaginary numbers.

IV. Art ; The Manifestation of FX

1. A language without a standpoint is an art (with a double meaning). If the logical space and dimensions are the self-description of FX, then art is the manifestation of the wholeness of FX. The self-description of FX is based upon the property of FX, which is identical with the self-imposed necessity of FX to describe itself by itself and for itself. The wholeness of FX is the existence of such a FX, which, if it is to be understood, must be described through a demonstration. However, a demonstration is not identical with what is demonstrated. A demonstration is an intrinsic property of whatever that exists. The property of being describable and understandable is a tautological relation between what is existent and what is demonstrable. The world is itself a demonstration and is therefore describable and understandable by itself, based upon its own necessary property. Consequently, whatever that is describable and understandable, relies only upon itself for its existence. The wholeness of what is describable and understandable, is therefore whatever that is present. Art is not a way of presentation but the existence of whatever that is present in whatever ways. The language of art is not describable because art is not a demonstration. It is the language of art itself that is an art. A work of art cannot be described, but can only be seen in the fact that what sees it and what is seen are one and the same (i.e. FX). What makes something a work of art, is merely the fact that ‘I’ and this ‘something’ are indeed identical. Therefore, anything can be a work of art if and only if ‘I’ project ‘myself’ onto it and am therefore projected by it onto ‘myself’ ; even a lying stone or a falling leaf can be itself a work of art. Such a projection is the language of art, which is bilateral and is therefore the manifestation of a wholeness. Therefore, art is the way by which whatever that exists, exists in that very way.

1.1. Art cannot be seen on or in or through materials and by materials. Art is the identity of whatever that sees and is seen, and therefore lies anywhere except in museums, concert-halls and libraries. The purest form of art is the totality of the transitoriness of manifestations of a wholeness, which constantly comes and goes. It is the distortion and, moreover, destruction of art to try to catch and preserve it by material means. Whatever that is caught and preserved by whatever means, is only half rotten staleness, from which, if it is well-caught and -preserved, its former liveliness can only be glimpsed at as the sadistic torture of the ‘intellect’ (i.e. the self-describability of the world) which descriptively tries to reconstruct it despite of its non-descriptiveness. Art cannot be described. The language of art is the transitoriness of moments of a wholeness, whose ‘beauty’ can only be ‘appreciated’ at best by letting it come and go. Art in a degenerate sense has little to do with art in the above sense. Art in a degenerate sense relies upon materials and specific natures of materials, which not only imposes limitations upon itself as to what and how moments of a wholeness can be caught and preserved, but also become impure in the sense that they are ‘ours’ of ’ours’. Anything is ‘ours’ of ‘ours’ if and only if it is filtered through and by the wholeness of ‘our language’. ‘Our language’, if it is not schematized, only reflects limitations of its user-machines (i.e. human body-mind machine). This is so because ‘we’ program, and are programmed by, ‘our language’, so as to utilize ‘our’ given spatial and temporal limits to ‘our own’ maximum spatial and temporal benefits. ‘Our language’ is therefore itself the language of art by which its users attain a wholeness to their specific end which is limited and imposed as a description of the world. Humans are a way by which FX manifests itself based upon its wholeness and are themselves a work of art. Art in a degenerate sense is ‘our art’ which is expressed by means of ‘our language’.

1.2. ‘I’ as a FX and ‘I’ as a human are only non-descriptively identical and therefore have descriptively nothing to do with each other. While the former ‘I’ can understand whatever that exist, the latter ‘I’, if it is so understood, is a mere existence which complies with its necessities. An existence necessarily complies with its necessities and is therefore embedded with a wholeness. It is therefore itself a work of art. Consequently, ‘our language’ is twofold ; on one hand, it complies with its innate necessity and schematizes itself, on the other, it can be taken as such an existence. Every innate necessity is identical and gives rise to an identical demonstration. ‘We’ and ‘our language’ are therefore internally identical. An existence is based upon its wholeness. Every wholeness can be associated with every other wholeness as a description of the world. ‘We’ make the world ‘our world’ through ‘our language’. Therefore, the wholeness of ‘our language’ is associated with ‘our wholeness’ in the sense that ‘we’ and

‘our language’ are manifested in each other’s wholeness as a description of the world. ‘We’ and ‘our language’ interact toward a common end so as to be a description of the world (i.e. so as to exist for the sake of an existence so long as an existence is imposed). ‘Our language’ is not descriptive as an existence ; for anything exists either by describing itself or as such an existence. On one hand, ‘we’ and ‘our language’ exist as an existence if the world describes itself, on the other, the world exists as an existence if ‘we’ or ‘our language’ describes itself. ‘We’ use ‘our language’ in the former sense in order to describe neither the world nor ‘us’ but ‘ourselves’. It is therefore not descriptive and is itself a work of art. ‘Our language’ in the latter sense is identical with anything ; for whatever that exists is anything and describes itself. Every self-description is identical because every innate necessity is identical.

1.3. The existence of the ordinary language (i.e. ‘our language’) lies in its use and therefore in the existence of its user-machines. The use of the ordinary language results in a meaning which can only be ‘appreciated’ in terms of its wholeness and therefore by means of ‘ourselves’, which is to see its specific end as a description of the world. Every existence (and therefore including such an existence as ‘ourselves’) has its own spatial and temporal limits imposed by the way by which it exists in its wholeness. The use of the ordinary language gives rise to a meaning which coincides with such limits. The ‘appreciation’ of such a meaning is the manifestation of ‘our’ limits, which are self-imposed upon ‘our’ existence as a description of the world. ‘I’ as a human therefore appreciate human art because ‘my’ limits are identical with those limits which are so imposed upon whatever that ‘appreciates’ what ‘I’ appreciate. Art in a degenerate sense derives itself from the ordinary language, which is itself a work of art. Its form of derivation is merely the disintegration of the wholeness of ‘our limits’ into the totality of ‘our’ sets of a limit. Whatever that is based upon such a form is therefore dependent upon one another for its ‘appreciation’ ; for it can be ‘appreciated’ if and only of it integrates itself back into the ordinary language. No single human art can be ‘appreciated’ purely on its own merits. The cause of such an ‘appreciation’ is ‘our’ wholeness. The ‘appreciation’ of an art lies in its embodiment of a human limit which is singled out by that art and therefore makes it more explicit for its need to reunite itself with every other limit. The ‘appreciation’ of art in a degenerate sense is identical with ‘our’ human existence which is so united by ‘our language’.

1.4. ‘My’ being as ‘I’ am, is so caused by ‘our language’. However, ‘I’ describe and understand not by ‘our language’ but by ‘my’ self-imposed necessity. In this sense ‘our language’ is ‘myself’, which exists and complies with FX. ‘My’ complying with FX and ‘my’ being as ‘I’ am, amount to say that ‘my’ describing and understanding whatever that is existent, includes ‘me’, but not ‘myself’. ‘Myself’ can only be postulated from ‘my’ describing and understanding whatever that is existent, which includes ‘me’. Therefore, ‘myself’ is FX, which is a wholeness self-imposed with a self-decribability. ‘Myself’, however, exists regardless of ‘my’ describing and understanding. This is so because ‘I’, like everything else which is existent, describe and understand according to an innate necessity. This is the way by which the world exists. If ‘myself’ is an art, art in its purest form cannot be descriptive ; for it can only be described by its innate necessity and schematizes itself. Such a description, however, does not represent a wholeness because a wholeness cannot be seen from within a description. Therefore, the very act of trying to describe and understand art, distorts and destroys it. Art is then a pseudoscience. It thus comes to be taught in universities and becomes subjects of examination, which are answered and marked by those with an academic understanding of art. Universities no wonder produce thousands of great artists and writers.

2. The meaning of the ordinary language lies in its wholeness. This means that no formal systematization of the ordinary language can bear the very meaning of the ordinary language ; for the description of a whole is more than that of all its constituents. A whole cannot be seen from within the description of all its constituents unless the completeness of all its constituents can be described. Such completeness, however, cannot be described purely within a whole unless every part of a whole is evaluative in terms of its consistency with this whole. However, if there is a means which enables a part to describe itself to be consistent, then there required to exist another means by which this means, being also itself a part, can be described to be consistent. This therefore results in an infinite retrogression and the disintegration of a whole. Consequently, if a whole is indeed complete, then the wholeness of such a whole cannot be seen from within that whole. The ordinary language exists on its own and cannot have any appeals to

any schemata, which might make a sentence evaluative in comparison to what is referred to by that sentence. In the ordinary language the meaning of every sentence holds by appealing to the wholeness of the ordinary language, which coincides with the wholeness of human existence. That is, a sentence can only mean something by appealing to a human wholeness. The ordinary language is therefore, in its pure form, descriptively non-productive in its applications. By contrast the meaning of a schema does not lie in its wholeness ; for a schema is not the description of a whole but a part of the demonstration of a whole. For this reason the consistency and completeness of the schema of logic can only be demonstrated, but cannot be 'proved'. That is, RAA is not described but conditionalized based upon a descriptive necessity and therefore cannot be 'proved' within the very structure in which it is a part. In the same sense truth-values, if they are not simply borrowed from nowhere, come to be on the same descriptive level as operators. Therefore, the 'proofs' of the consistency and completeness of the schema of logic are themselves no more than a part of that schema. A part of a schema assumes the wholeness of that schema and is therefore based upon the descriptive necessities of a wholeness (i.e. FX), while a sentence of the ordinary language assumes the whole of ordinary language in order to be meaningful.

2.1. The necessity of a schema cannot be described, but can only be demonstrated. This is so because except by descriptive necessities there is nothing by which such a necessity can be 'proved' to be necessary. If, however, there should be, its necessity must also be 'proved'. Therefore, a necessity can only be demonstrated. This amounts to say that '⊦' is meaningless. Necessities in a schema can only be shown by the continuity of self-description (i.e. by the fact that nothing is borrowed from nowhere). Modal logic is completely meaningless unless it is taken as a demonstration (i.e. unless it can show its descriptive necessities). This is also to say that only what is demonstrable, is demonstrable ; for nothing is demonstrable unless it has a descriptive necessity, which can only be originated in the self-describability of FX. Consequently, intuitionistic logic is completely superfluous. The meaning of a variable is in its descriptive necessity, and not in its 'values', which can only be conditionalized after the schema of logic is completed.

2.2. If the ordinary language is not meaningfully applicable in its pure form, then no schemata can be derivable from the ordinary language in its pure form. This means that whatever may be derivable as a schema in addition to those which are conditionalized, it can only be a descriptive interaction between existing ones. The space in which such interactions take place, is the applied ordinary language. The applied ordinary language is, while the ordinary language is purely subjective, an ordinary language which is made pseudo-descriptively communicable by the universality of schemata. The idealization of this pseudo-describability results in such derived schemata as predicate logic and many-valued logic. Descriptions by this pseudo-describability result in pure and applied sciences. Neither is, however, of any use in describing the world. This is so because they are descriptively superfluous in the sense that they can always be reduced into more fundamental ones (i.e. conditionalized schemata).

2.3. For example, if entities, masses or bodies are grouped in accordance with varying spatial and/or temporal relations and are described by means of the schema of logic, it yields predicate logic. Alternatively, if numbers are grouped in terms of types, relations among types and properties within types and are described by means of the schema of logic, it also yields predicate logic. Many-valued logic follows in parallel to the conditionalization of the schema of physics. That is, the logical space, once completed, becomes relativistic to itself and is itself neither 'true' nor 'false' ; for T and F meaningfully exist only within the logical space. This property of being neither T nor F is used to describe the logical space in the parallel way by which spatio-temporal continua are described within a spatio-temporal continuum. The logical space, if it is taken as its own space, becomes its own constant, whose meaning is the 'undecidability'. This 'undecidability', however, can only be so meant if and only if it is seen from the inside of the logical space, in which alone everything is describable in terms of T or F. The relation between the logical space in its inside and that in its outside is parallel to that of the recursive space-time. That is, like the two extremities of space-time the decidability and undecidability cannot be related to each other by negation. They are mutually transformative and therefore generate a new form of description, which is based upon the decidability in the same way by which space-time recurs between two identical inertia systems. The interaction

between the schema of geometry and that of arithmetic results in pure mathematics, while that between the schema of physics and pure mathematics results in applied mathematics and pure physics. If applied mathematics or pure physics is applied (i.e. if a ‘model’ is made from applied mathematics or pure physics), it becomes an applied science. A ‘model’ is descriptively not necessary but arbitrary. It is to bind the general system of applied mathematics or pure physics by certain numerically translatable and materially (i.e. 4-dimensionally) interpretational constraints as appropriate to bring the human wholeness to its specific end as a description of the world. ‘Models’ therefore reflect the human sense of ‘values’ (i.e. the human descriptions of themselves). Constraints vary in accordance with what is necessary and available. For example, such an applied science as aeronautical engineering may disappear (i.e. become unnecessary) when the lifting and moving of a body come to be based upon a different principle such that does not require a consideration into an air flow or that does not depend upon chemical reactions. An interaction between schemata is possible because no schemata are exclusive of one another. Therefore, if humans have an ability to describe themselves so as to bring themselves to their own specific end, then such interactions may take place as human operations. However, principles in applied sciences can be reduced into those in pure sciences. Principles in pure sciences can be, in turn, reduced into those in conditionalized schemata. Humans are a way by which the world describes itself in accordance with the descriptive necessities of FX and within the schema of physics. Therefore, the description of humans by humans is already written in the schema of physics by the self-describability of FX.

3. Metaphilosophy : Philosophy is not an art in the sense already referred to. However, it may be, in its own right, said to be the art of description with a definite form, which makes it distinct from every other art. It is the self-portrait of the atomic symbolic form, which takes itself as its own form of description. Therefore, the whole presentation of a philosophical system is the descriptive manifestation of the atomic symbolic form itself. The language which is employed in a philosophical system only has a definite meaning as a whole. This meaning is namely the demonstrative reference to the atomic symbolic form itself. What amounts from this whole description is only a tautology ; the atomic symbolic form is the world, and vice versa. This is only tantamount to a single universally quantified reference to the atomic symbolic form and is therefore only demonstrably meaningful and justifiable. A philosophical form is therefore the demonstration of a whole, which describes itself. The art of description with a philosophical form is not an arbitrary construction but the manifestation of the standpoint of a description in itself. Such manifestation is a self-description. It is an art because the wholeness of a demonstration can only be justifiable within that demonstration by the fact that nothing remains undescribed. However, a demonstration itself cannot be demonstrated for its justification. It can only postulatedly claim that it follows its own course which it sets for itself and by itself. That is, the validity of the atomic symbolic form lies in the atomic symbolic form itself.

3.1. Philosophical methodology : Philosophy is contentless, and everything else but philosophy has a definite content, namely philosophy. Philosophy is a pure contentless science. It deals with the method of description. The method of description is the only and very subject-matter of philosophy. The method of description can be shown as the description of a description. This is so because a description is made possible by the properties not of the contents of a description but of a description itself. No descriptions can describe its own properties without falling into an infinite retrogression. Consequently, an investigation into such properties can only be based upon a postulation. A description is visible only when it has contents. A description without contents simply ceases to be a description because there is nothing to be understood in that description (i.e. because there is no necessity for it to exist). Therefore, the existence of a description is postulated to be identical with whatever that can be described. If there exists a description, and if this existence cannot be refuted, then the properties of a description are identical with the describability of whatever that is describable. This describability is the necessary property of what is necessarily existent ; for it exists necessarily on its own. The description of such describability is the demonstration of its existence, based upon nothing but itself. Therefore, philosophy can only be a demonstration (i.e. the demonstration of method). The standpoint of a description in itself lies in its own postulated existence. The postulatability of such an existence lies in ‘oneself’, which is necessarily either to understand something or not to understand anything. If the latter is the case, then no

arguments follow. If the former is the case, then whatever may follow, it is describable and understandable solely on the ground that it exists. Such an existence is a descriptive existence and has no contingent properties ; for such an existence is necessarily describable to be only existent and is only so describable. Such an existence is 'oneself', which is, in order to understand something, understood to exist and has the property of understanding something (i.e. including 'it', but excluding 'itself'). This 'itself' can only be the whole of demonstration. The property of understanding something is identical with the property of something's being describable ; for a description is a description if and only if it is by itself understandable. The contents of a description is, whatever they may be, the concern of particular sciences. If anything is left for philosophy, it can only be something which sciences cannot, and are not equipped to, deal with. Sciences may not develop deductively, but are always formulated deductively. Consequently, that from which sciences are descriptively deductive, goes beyond the scope of sciences. This and only this belongs to the domain of philosophy and results in the description of a description. The 'proof' for this is a philosophical demonstration. That is, if there exists philosophy, it can only be the science of sciences and is also an art in the sense that it is the manifestation of a whole, and not the descriptive presentation of a part. A philosophical demonstration is not arguments on sciences but the exhibition of sciences and is therefore also the embodiment of art.

3.2. Language : The description of a description is based upon the self-describability and therefore, by and for itself, sets its own conditions of being a description. Such conditions are descriptive necessities. The language as the means of descriptions is whatever that satisfies those descriptive necessities. It is the structure of a whole. The ordinary language is the wholeness of a whole and therefore can only be 'appreciated' in its entirety.

3.3. Philosophy in its very degenerate sense (but not so degenerate as to mean what is conceived to be philosophy by professors of philosophy, who were once good at examinations and are now good at marking them, of which answers are best found in their admirably profound encyclopedic brains) is a human art in the sense that it is not descriptions by descriptive necessities but a literature, which cannot be 'appreciated' on its own. A philosophical theory without descriptive necessities is purely arbitrary and therefore assumes a human wholeness for its 'appreciation'. That is, it is neither a demonstration nor a description but an appeal to what is taken for granted as a human existence in its wholeness. Such an appeal is always piecemeal. This is so because a whole can only be presented by a demonstration (i.e. by descriptions in a demonstration). Otherwise, a philosophical theory can only be based upon some standpoint which, if it is not that of a description in itself, can only be that of a description or of art. If the former is the case, then it is a science, and not philosophy. If the latter is the case, then it is merely a way by which the world describes itself in accordance with descriptive necessities and is therefore not the description of the world but a 'face' of the world. The arbitrary construction of a theory never presents the world in its entirety and therefore always assumes parts which are not presented. A human existence is a 'face' of the world.

4. Anyone who try to describe FX via his life, is an artist. The greater the approximation between art and life, the greater artist he is. At the limit of approximation, however, he will destroy himself ; for an artist himself remains undescribed otherwise. Part of life, that is a describer, have to remain so if he is to describe at all. This is the very part that cannot be described wholly. The describer, if he should manage to describe himself, will need an audience. This audience is the wholeness of FX, if there is one. A rational artist can only be a failed artist ; to the extent an artist is there to describe something, he can only fail. The essence of art is a failure to be appreciated. Only in true art art merges into death, but an artist will never see it. For an audience it is a demonstration of the undescribed FX.

4.1. A non-descriptive entity is a mystery, which, if it remains non-schematic, is only to demonstrate. Undescribed, non-logical FX demonstrates life by death ; for the ultimate work of art can only be life itself. That is, there cannot be any sane artist if he tries to describe something that is not logically describable.

4.2. There are only three kinds of human existence ; a describer, who is either a schematizer or

doomed-to-fail philosophizer, a manifestor, who is an artist, whose medium of expression is, if he is sane and mediocre enough to want to be recognized, synchronous appeal to communality, and an audience, which is a silent partner (a receptacle of FX shared through the ordinary language). The last category consists of almost entire human existence including notational technicians, paradigm refiners, so-called ‘scientists’, data gatherers, historians of ideas, philosophy teachers, arty craftsmen, art commercializers and all those who exist for the sake of existence - pejoratively but revealingly called economic animals, but it is nevertheless indispensable for the first two categories to exist. They together form the wholeness of FX.