

# THE EUCLIDEAN PHILOSOPHY OF UNIVERSE ( NATURE )

This article has been written after Reading "Auxerre", Etienne Gilson Author of History of Philosophy and to all those readers that believe to Euclid Geometry as the Model of all Nature . A way also to understand the concept ability of Euclidean Geometry

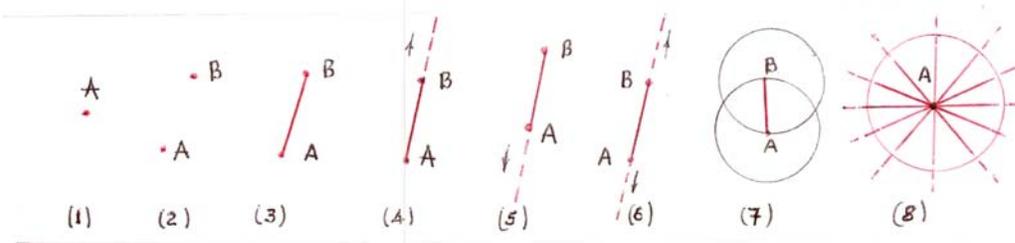
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It is not Accidental the fact that the Perception and Order of Elements of the Euclidean Geometry are with so much conceptual importance . This will appear clearly with the analysis which follows .

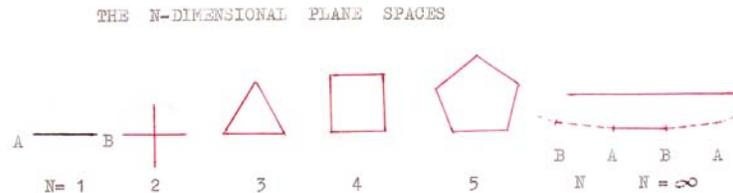
## FUNDAMENTAL PRINCIPLES .

1. The Elements of Euclidean geometry are , Points , straight Lines , circle .etc,



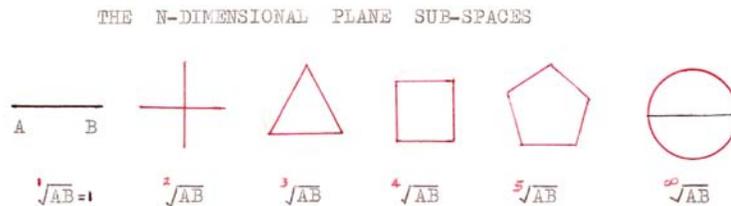
F.1

2. The Space Layers ( Regular Solids ) with sides equal to  $AB = 0 \rightarrow \infty$   
The Increasing Plane Spaces with the same Unit . [ 9 ]



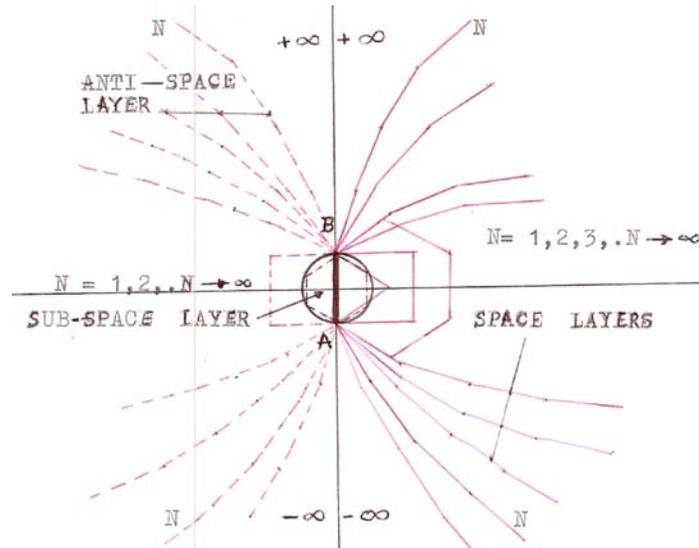
F.2

3. The Sub-Space Layers ( Regular Solids on AB ) as Roots of  $AB = 0 \rightarrow \infty$   
The Decreasing Plane Spaces with the same Unit . [ 9 ]



F.3

4. The Superposition of Plane Space , Anti-Space Layers and Sub-Space Layers :  
 The simultaneously co-existence of Spaces , Anti-Spaces and Sub-Spaces of any Unit  $AB = 0 \rightarrow \infty$  , i.e. , Euclidean , Elliptic , Spherical , Parabolic , Hyperbolic , Geodesics , Metric and Non-metric geometries , exists in Euclidean Model as an Sub case within .The Interconnection of Homogeneous and Heterogeneous Spaces Anti-Spaces and Subspaces of the Universe . The Unity of Opposites . [9]



F. 4

1. Any single **point A** , constitutes a Unit which has neither Position ( direction ) nor Dimension ( magnitude ) . It is non-dimensional = The Empty Space , (F.1,1)

Any single **point B not coinciding with A** , constitutes another Unit which has also dimension zero . Only **one straight line** ( ie. The Whole is equal to the Parts, or the equation  $CA + CB = AB$  ) passes through points A and B which consists another non-dimensional Unit , since it is consisted of infinite points . ( F.1,2,6 )

**A line Segment AB** between points A and B , ( either points A and B are near zero or are extended to the infinite ) , **consists the first Unit with one dimensional** , the length AB , beginning from Unit A and a regression ending in Unit B , ( F.1,3 ) Adding a third **point C not on the straight line AB** , then is constituted a new Unit ( the Plane ) without any Position or dimension , since is also consisted of infinite points without any Position ( direction ) or Dimension ( magnitude ) . ( F.1,7,8 ) Quantities involving both , *Direction and Magnitude* , are called *Vector quantities* and those involving only Magnitude are called *Scalar quantities*.

2. One dimensional Unit AB is the geometrical Shape that has as Position the ( direction AB , BA ) and as Magnitude ( the length  $AB = 0 \rightarrow N \rightarrow \infty$  ) . ( F.1,3 )  
 $ds$  = An Infinitely small increment of length AB in the direction AB  
 $\infty$  = An Infinitely great magnitude AB in the direction AB , BA .

3. **Spaces of Unit AB** are ( in Plane ) the Infinite Regular Polygons inscribed in the circle with AB as Side , ( repetition of Unit AB ) and in Nth Space , the Nth Unit Tensor of the N variables ( N finite Elements ) . ( F.1,4 ) , ( F.2 )
4. **Anti-Spaces of Unit AB** are ( in the three dimensional space ) the Symmetrically Infinite Regular Solids inscribed in the Sphere with BA as side of the Solid , ( repetition of Unit BA , symmetrical to AB ) and in Nth Anti-Space , the Nth Unit Tensor of the N Anti-variables ( N finite Elements ) . ( F.1,5 ) , ( F2 )
5. **Sub-Spaces of Unit AB** are ( in Plane ) the Infinite Regular Polygons inscribed in the circle with AB as diameter , ( repetition of the Roots in Unit AB ) and in Nth Sub-Space , the Nth Unit Tensor of the N variables ( N finite Roots and in case of  $\infty$  Elements are the points on the circle ) . ( F.1,6 ) , ( F.3 )  
The Superposition of Spaces , Anti - Spaces and Sub-Space Layers of Unit AB is shown in F4 .

## ANALYSIS OF SPACES

Unit AB creates Spaces with two basic Elements , **the Position** ( which are the three directions  $AB \rightarrow$  ,  $BA \leftarrow$  ,  $AB \leftrightarrow$  ) and **the Dimension** ( which is the Magnitude  $N$   $N = 0 \rightarrow AB \rightarrow \infty$  )

The Position AB is shown in ( F.1) 3,4,5,6,7,8 – ( F4 ) , and magnitude  $N$  is as ,

$A = B$  = *Principle of the Equality* .

$A \neq B$  = *Principle of the Inequality* .

$A \rightarrow \leftarrow \leftrightarrow B = \infty$  *Principle of Virtual Displacements* .  $\mathbf{W} = \int \mathbf{P} \cdot d\mathbf{s} = 0$  ,  $d\mathbf{s} = \partial W / \partial \mathbf{P}$

- a.  $N = 0$  , Point B coincides with point A . [ *Principle of the Equality  $A = B$*  ]

The Zero Spaces , Anti - Spaces and Sub-Spaces coin side at point A which point may be anywhere , and this happens only with the infinite straight lines passing through point A , which has no Position .

*Empty Space* , are the infinite Points on straight lines through point A . ( F1., 8 )

- b.  $N = AB$  , Point B is such that ,  $0 < N < \infty$  , [ *Principle of the Inequality  $A \neq B$*  ]

The Spaces , Anti - Spaces and Sub-Spaces are created from Unit AB with the Fix Position  $AB \leftrightarrow$  , and are the Vertices of the Regular Polygons and Anti - Polygons ( *inscribed in the circle with AB as side , and also inscribed in the circle with AB as diameter* ) , and in Nth Space , the Nth Unit Tensor of the N unit variables ( N finite Elements ) . ( F4 )

**Empty Space** , are the Infinite Points of Spaces , Anti-Spaces and Sub-Spaces of Unit AB with Position  $AB \leftrightarrow$  , and Dimension  $N = AB$  . ( F4 )

c.  $N = \infty$  , Point B is in Infinity ,  $N \rightarrow \leftarrow \leftrightarrow$  , [ *Principle of Virtual Displacements* ]

The  $\infty$  Spaces , Anti - Spaces and Sub-Spaces are created from  $\infty$  Points only, without Position and Dimension , and are *within these* infinite enclosed points.

**Since Spaces , Anti – Spaces and Sub-Spaces are created from Unit AB , and are Property of this Unit only , therefore these are a Restrained System ( S )**

Presupposition for Unit  $AB = ds$  (displacement  $ds$  ) , is Point A to move at the New position B ( $A \neq B$ ) , which means **an IMPULSE ( P ) removes point A to B** . Since in each Restrained System ( S ) the Work done ( W ) by Impulse ( P ) on a Virtual displacements ( $ds > 0$ ) is zero , or 
$$W = \int_{A-B} P \cdot ds = 0$$

**Therefore , Each Unit  $AB = ds > 0$  exists , by this Inner Impulse ( P ) .**  
*i.e. The Position and Dimension of all Points which are connected across Universe and that of Spaces exists , because of this Static Inner Impulse , on the contrary should be one point only ( Primary Point = Black Hole ) .*

Since the Primary Point may be , **in either one or in many Points** , ( Position ) *and as this is the only Opposition in this Point , therefore , this Primary Point is the first Restrained System ( S )* and so , this System creates **ds** following the three *Principles of Equality , Inequality and Stability ( Virtual displacements )* .

In case Primary Point is the only Point *in one Point* , then all points that consist the Primary Space are within this Point , interconnected with Finite and Infinite **ds** and in Infinite Positions , where  $0 < ds < \infty$  and  $0 < N < \infty$  .

In case Primary Point is the only Point *in Many Positions* , then all **Many Positions are these Points of Primary Space** , and the Infinite Units  $0 < AB < \infty$  create each one the Infinite Spaces , Anti-Spaces , Sub-Spaces of Units . All Points of Universe which consist a Space , are these of Primary Space which exist in the only Point , and are connected across Universe by this Inner Impulse ( P ) . *(The Uniting of Opposites)* .

**Empty Space** , are the Infinite Points , *either these coincide or not* , created from a Primary Point , that creates Units ( **ds** ) and from them all Spaces , *with all above Properties* , and by the Interconnection of all Spaces all New Units with all New Spaces and so on ( *The Uniting of all Opposites* ) . ( F1, 1-8 ) , ( F4 )

Since Virtual Work is related only on Impulse ( P ) and displacements (  $ds$  ) , Time or other variables are not Properties of Primary Space .

The correlation of Spaces created by units AB with the  $0 = N = \infty$  Unit variables (  $N$  finite Elements =  $N$  Degrees Of Freedom ) are contained Properties .

**The Two Independed Variables in Universe are , Impulse ( $P = 0 \rightarrow \hat{A}B \rightarrow \infty$ ) and Displacement ( $ds = 0 \rightarrow AB \rightarrow \infty$ ). All other Variables are Depended .**

- d. **Since the FIRST POINT (A) , may have or not --Position and Magnitude-- and as this is the only Opposition in this Point , then this Point is the first Restrained System which creates ds itself , by following the Principle of the Equality the Principle of the Inequality , and Principle of Virtual Displacements , and then creates with all the other correlated points ( B ) of Primary Space , Units AB , with the  $\infty$  Altering Spaces Anti-Spaces and Sub-Spaces of Units AB .**

**The Interconnection of all above is what EXISTS and what IS DONE . Each Point and Unit AB exists , by an INNER IMPULSE ( P ) , of Magnitude  $0 = N = \infty$  which is Proportional to ds**

### Conclusions 1

- a. **Identifying Principles of Equality ( $A = B$ ) and Inequality ( $A \neq B$ ), then is crated for Stability the Restrained System of Virtual Work [  $\sum P_i \cdot \Delta s = 0$  ] Applying these Principles on Primary Point A to exist the same as it is in many points B , Impulse ( $P = 0 \rightarrow \hat{A}B \rightarrow \infty$ ) and Displacement ( $ds = 0 \rightarrow AB \rightarrow \infty$ ) where  $W = \int P \cdot ds = 0$  , create all infinite Static Primary , Spaces and Anti-Spaces .**
- b. **The Stability of theses Primary Spaces exists with the Negative Anti-Spaces , based on the same identified Principle of Equality and Inequality .**
- c. **The infinite combinations of these two In-depended variables ( $P$  ,  $ds \rightarrow \Delta s$ ) contain in itself all infinite Static Primary Spaces . On point B exist infinite common Impulses ( $P = 0 \rightarrow \hat{A}B \rightarrow \infty$ ) , due to the Stability of the Primary Spaces and Anti - Spaces [  $W = P \cdot \Delta s = 0$  , and  $P_{,AB} = (\sum L_i \cdot P_i) / \Delta s$   $i=1 \rightarrow \infty$  , where  $\Delta s$  ,  $L_i$  , is any dimensional unit distance ] , and connects the many points within infinity . Applying Principle of Virtual Work on any Point B with  $P = 0$  , then Springs at this point Impulse P from infinite points of Primary Space ( $\Delta s = \partial W / \partial P$ ) . The beginning of the Change is enclosed in Position B and it is the Essence and Cause of Impulse P .**
- d. **The Unique Case where  $P = 0$  and  $\Delta s > 0 = AB \rightarrow \infty$  is the Primary Neutral Space [ PNS ] . The connection of points in PNS , is related on the influence ( $P = 0 \rightarrow \hat{A}B \rightarrow \infty$ ) of the infinite ( $\infty$ ) Primary Spaces Anti-Spaces  $\leftrightarrow$  ie. all Points of PNS are Homogenous and Isotropic .**
- e. **Since the Identification of Principles of Equality and Inequality create under Stability the Restrained System of Virtual Work [  $\sum P_i \cdot \Delta s = 0$  ] , this new System consisted of Impulse and Displacement is a NEW UNIT . ( Μονάδα ) .**

## Conclusions 2

*a. Since any two Points A , B on Primary Space or Anti-Space , consist the first Dimensional Unit AB , then itself , using the same Principles of Equality (  $AB = BA$  ) Inequality and Stability , creates all Spaces , Anti-Spaces and Sub-Spaces of Unit AB, and Since are Property of this Unit only , therefore these Spaces are a Restrained System of Unit AB .*

*b. Since Impulse  $P_A , P_B$  of points A , B is Property of these points only and since also Spaces , Anti-Spaces and Sub-Spaces of Unit AB is a Restrained System of this Unit AB , therefore, Impulses  $P_A , P_B$  at points A ,B, and the Spaces , Anti -Spaces and Sub-Spaces of Unit AB is a New Restrained System . A New Unit with a quite different Quality ( MATERIAL UNIT ) . ( Υλική Μονάδα ) .*

The Physical Reality of all Spaces with all Units and points *to be* at the Position they are *and How this is Done* , follows .

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