

## **Presentation of the model**

**- an earlier introduction -**

### **1. "Simpleminded" postulates:**

- Science seeks tracing manyfoldness back to unity.
- The creation of universe would presumably have the opposite direction.
- The most uniform (or integrated) concept we have got is the Whole (the Entirety).
- The starting point, therefore, will here be "the Entirety" as first postulate.
- The simplest way to get manyfoldness from unity should be through dividing.
- Assume therefore that the world was created through the division of the Entirety.
- Science seeks relations.
- In physics some word for relations is often used as equivalent to the concept of "forces".
- The simplest relation or bond between two parts of a unit is that they are parts of this unit - or has been. It's the relation that reigned "before" the division.
- Assume then that the Entirety is this first bond or relation, the first force operating between its parts - when it was divided or split. It may be called the "entirety force".

### **2. Dimensions as building material:**

- Postulated: the entirety and its partition.
- We assume now that the partition has the character of polarisation.
  
- The concept "dimension" is chosen as building stone for this model. Geometrically it's generally designated by co-ordinate axis. Dimensions are usually taken as geometrical concepts.
  
- It will be stated here that a dimension is characterised by 2 complementary poles. This means that a dimension is the result of a partition or split, a polarisation.
  
- Physicists generally have been content with 4 dimensions (in standard models, 3 for space, 1 for time. ).  
    Suppose therefore that the Entirety is one dimension higher, that it is 5-dimensional.
  
- The 5th dimension degree as the Entirety as first unit, we now assume, gets polarized in 2 poles, mathematically designated 0 and  $\infty$  (here =  $\infty$ ), a point and the infinity. Geometrically the poles can be defined as centre and "periphery". Conceptually as centre and anti-centre = everything else. Note this new definition of "infinity".
  
- Suppose further more that every polarisation gives birth to the next lower dimension degree. The polarisation then of the Entirety in centre and anti-centre gives rise to the 4th dimension degree.
  
- What you get defined by a polarisation centre / anti-centre is Direction, outwards/inwards. Compare the vector concept. The 4th dimension degree ought to be identified and notified as Direction. (Graphically the 4th dimension degree can be represented by double arrows, two-ways in direction,  $\rightleftarrows$ , between centre and anti-centre.\*
  
- The 4th dimension degree will in next step be polarized in outward direction and inward direction. These are the 2 poles of the 4th dimension degree. This polarisation is

assumed to give birth to the 3rd dimension degree, the definition of volumes geometrically.

- The 3rd dimension degree will be polarized in the following step in 2 poles. In this first schematic outline, with a primitive geometry, these 2 poles could be identified as enclosed and excluded centre respectively, or radial / circular structure.

- Between the poles of the 3rd dimension degree are surfaces defined, the 2nd dimension degree geometrically.

- The 2nd dimension degree, that of surfaces, is in its turn polarized, divided, in 2 poles which possibly could have the character of inside / outside, convex/concave surface, or similar identifications geometrically. The polarisation gives the 1st dimension degree, the line.

- The 1st dimension degree, the line, polarized, gives 2 poles, which we here presume can be identified as motions: "movements toward each other" and "movements from each other". (In simple geometry a divided line leads to the point.)

- Movements towards each other, converging, defines in their turn a centre, a zero- or 0-pole. And movements from each other, diverging, define an anti-centre, a 00-pole.

- With that the 1st dimension degree can be seen to define the dimension degree of "0/00". These are also by definition the both poles of the first 5-dimensional Entirety. Still not the same unpolarized Entirety as at the beginning.

- The "dimension degree 0/00" - corresponding to the concept of pure kinetic energy - can be designated 5' and be supposed to make the starting point for a new dimensional evolution. (About level development here.) Motions as concept gets its own place in the scheme and can be seen as the ultimate translation of the 5th dimension degree, expressions for the underlying unity.

One can call a development like the here described from a 5-dimensional unity via dimension degrees 4-3-2-1 to 0/00 for a "dimension chain"

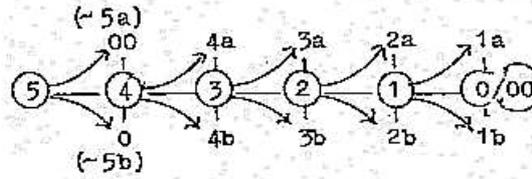
Each dimension degree that is "lost" in the steps towards lower degrees in the chain is assumed translated in an external 1-dimensional relation, which can be polarized in movements.

***Essential to note:***

All poles, each pair in the chain of dimension degrees, will be of a complementary type according to the assumptions, as a result of the first complementarity between centre and anti-centre..

\*About counting with 5 dimensions, one should observe that the ordinary mathematical concept of dimensions presupposes, without mentioning it, a centre, an origin - and plus and minus signs on the opposite directed co-ordinate axes: this means a couple of extra specifications in addition to the 3 about x-y-z-co-ordinates.

*From first chapter in the booklet Physics Ia*



**First critical comments:**

**Main opposition**, at first, concerns probably the geometrical statements about transformations in d-degree steps  $4 \rightarrow 3 \rightarrow 2 \rightarrow 1$ , not easy to visualise if at all possible:

1. How does anti-parallel vectors (outwards - inwards) in step  $4 \rightarrow 3$ , change to perpendicular ones? What makes expansion-contraction transform to rotational phenomena? It's an obvious reality for celestial bodies in macrocosm and in microcosm, but why and how? Step  $4 \rightarrow 3$ . (Later discussion here.)
2. How justify a statement - in pure geometrical terms, that in d-degree step  $3 \rightarrow 2$  a polarisation between radial and circular geometries in volumes are defining surfaces or 2-dimensional structures? Step  $3 \rightarrow 2$ .
3. And in step  $2 \rightarrow 1$ : How do surfaces - geometrically seen, get polarized into 2 "poles" which define between them a path line connection or one-dimensional potentials? Step  $2 \rightarrow 1$ .
4. Finally, in the last step from d-degree 1 to motions: can all motions be interpreted - at bottom - as a pole exchange between "to and fro", as in waves, as in living beings? What about rotation - of stars and planets for example?

Other questions:

- What kind of dimension concept do these statements imply?
- What drives the polarisations?
- Where do we find expressions for the unpolarized 4th or 3rd or 2nd dimension degree? Compare about superpositions in Quantum Physics.

Leaving these and more critical comments for a moment and further discussions to other pages, we will first suggest how the model could be applied to more physical concepts, surely easier to accept:

**Elementary quantities or concepts of physics:**

A first connection of this dimension model to the elementary concepts of physics could be done like this:

**5th degree:**

As the primary Entirety it doesn't get any attributes apart from mathematical. It is the world, everything and nothing, the whole cosmos, the universe, everything inside and outside of something or equivalent with universe. (See note below.)

**4th degree:**

Here defined as Direction, could be identified with "fields" in physics, with 4-dimensional vector fields (inwards - outwards) or pair of forces, in relation to mass ("substance") when this is studied as such.

**3rd degree:**

This could be identified with the concepts of Matter and Space, where matter is analysed and regarded as simple structure. Its poles, geometrically defined as characterised by enclosed / excluded centre, or radial/circular (closed) structure, could at least out of one aspect be identified with matter/vacant space.

**2nd degree:**

Geometrically the dimension of surfaces, the 2nd degree is already so specified that it should have several expressions. Here is supposed that this degree could be in some meaning identified with the physical concept Charge (which the physicists when this was written didn't know what it was, according to David Park). This means that it should be possible to find some difference of 1 dimension degree in the mathematical equations that are connected with electric charge, relative to equations related to masses - or matter (about the difference mass - matter, see here....).

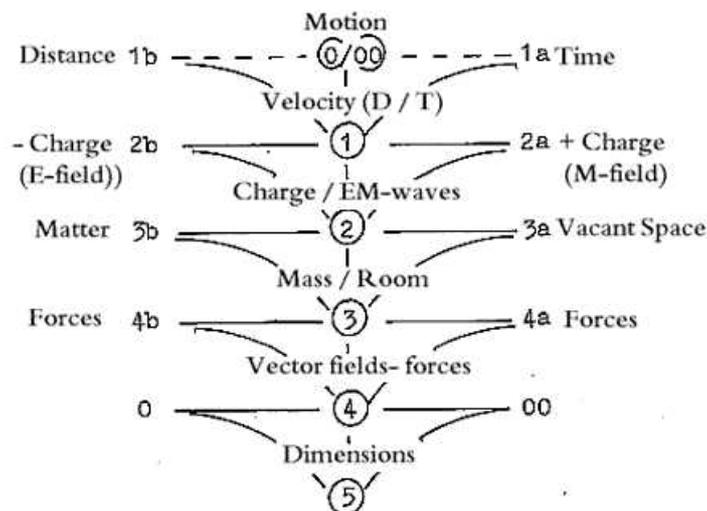
**1st degree:**

This degree, the degree of lines, could be identified with simple potentials. Compare to the concept of "field lines". In addition we have path lines for particles or bodies like planets.

Poles of 1st degree:

These should be identified also with the concepts of Distance and Time (or frequency as the inversion of Time).

**0/00 - the "dimension of Motion" -** is identified as such. What one - relatively - describes as such, - with pure kinetic energy.



*The elementary concepts of physics in a dimension chain - a first sketch.*

\* First physical concept in step 5 → 4 could be identified as Density, directions from a centre illustrating a gradient of "near / far" from the centre. That is an amount of something per a measure of something else, as Mass per Volume, or as Distance / Time in the concept of velocity.

### **Some central views on the "dimension chain"**

#### **Forces:**

- The concept of "forces" has been discussed and sometimes dissolved into mathematical relations. Still the concept of "forces" seems to be indispensable, so in the concept of "carriers" of forces, distinguished from other elementary particles, and in the so-called 4 known forces in physics. It is of course central in the standard model of quantum mechanics.

- When talking about "forces", you will give emphasis to something opposite to "structure", something that generates motions. Relations however, formulated in mathematical equations, has also the character of structure. This ambiguity fits very well in this dimension model.

As said above: the simplest bond between two parts of a unit is the unit of which they are, or "were", parts.

According to that statement, the binding force in each dimension degree is here assumed to be the next higher dimension degree. The 4th dimension degree constitutes the binding force in the 3rd dimension degree, the 3rd in the 2nd and so on. And a line, or distance, is the binding force in motions. (Apparently so in human beings' building of roads and railways as materialisation of distances and then using different vehicles to "bind the endpoints together!").

- In the opposite direction we ought to have the polarizing forces, from lower to next higher dimension degree.

- Then a "force" can be defined as one dimension degree operating upon next lower or higher degree, the latter seen or analysed as structure.

Presumably is that which is identified as working forces just one of the poles of a dimension degree. A usual statement is that a force always has its opposite force. But note: not necessary anti-parallel, in most cases not, according to this model.

- With these assumptions one has in a simple way traced the concept of force back to the concept of dimension.

A dimension could superficially be resembled with a rubber band that is stretched. The binding force is the contracting, inner, chemical force in the rubber material itself. The polarizing force comes from the outside.

It's worth remembering that the proton p or element H<sup>+</sup> and the electron are real "carrier of forces" in biochemical processes, in spite of being fermions and not having integer spin. That said as an argument for seeing forces as a concept for relations.

- Structure and force (or pair of forces) show up as two aspects on a dimension, depending on the starting point of the analysis.

The concept of connection is ambiguous:

The structural or outer connection between the poles 0 and 00 e.g. is the 4th dimension degree. While the more functional connection between the poles goes via the common origin, the 5th dimension degree, as an inner, underlying connection.

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The 5th degree is seen as the first binding force in all lower degrees, transformed and expressed in all motions and dynamic processes in Universe.

At the same time we can identify its poles 0 and 00 as the next primary forces: 0-pole (the centre) as the binding force and 00-pole (the anti-centre) as the polarizing force. Between these poles are the following lower dimension degrees developed.

We get two aspects on the 5th degree as primary "entirety force" or pair of forces:

- As pair of forces it is binding force relative to lower degrees, as the junction of ramifications.
- As polarized, the 0-pole becomes the secondary binding force in relation to the 00-pole as secondary polarizing force "the other way around".
- Binding character for the 0-pole: integrating from inside.
- First binding character for the 00-pole in 5th degree: aggregating from outside.

**Motions:**

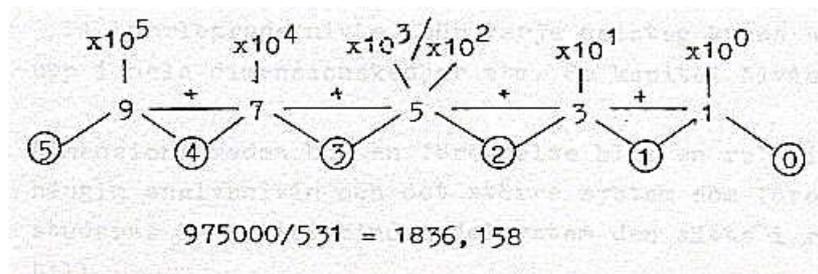
According to the thesis here, one d-degree is "branched off" or "lost" in each step and will be translated into external motions, an external 1-dimensional structural element, polarized into motions. The d-degree of motion will grow in the direction outwards in the chain, at the same time as the d-degree of structure falls off.

A chain can then be described totally in terms of movements This chain has then the opposite direction to the chain of structures:

Chain of motions 5 -- 4 --- 3 --- 2 --- 1 --- 0/00

Chain of structures: 0/00- 1 --- 2 --- 3 --- 4 --- 5

One example is the relation between the proton and the electron. According to Gamow has p and e about the same energy if the kinetic energy of the electron is taken into account. Look to the superposed chain 9-7-5-3-1 below: an example of odd mathematics in these texts:



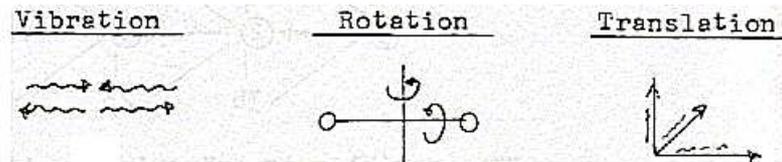
The quotient between the rest masses of p and e is given to 1836,12. The proton: most of the mass, d-degree 3, the electron as atomic shell, d-degree 2.

(One assumption about numbers is that a d-degree step in some contexts could represent a 10-power step.).

**Structure of motions:**

- Vibration in 1 dimension - in 4-dimensional vector fields?
- Rotation in 2 dimensions - by 3-dimensional bodies
- Motions in 3 dimensions - by "shells" or 2-dimensional phenomena...(as in cell membranes)...

Compare, as an association, with the temperature (here) motions in one- and two-atomic gases  $E_w = 3/2, 5/2$  or  $7/2$  (times a constant, times Temperature).



**Structure - process - motions:**

A dimension chain  $5 \rightarrow 4 \rightarrow 3 \rightarrow 2 \rightarrow 1 \rightarrow 0/00$  can be understood as a dynamic process of polarisations, of dimension steps.

We can also focus on the dimension degrees themselves as potentials instead of the steps and see the chain as a structure - like a standing wave can be seen as a structure. We choose then a static view.

Static/dynamic or structure/process becomes two aspects on dimension chains.

**Level of analysis optional:**

The assumptions above implies that the level or d-degree of analysis should be optional: So would different models of the atom for example have the same validity, if external relations or motions are included: analyses in vector fields, or particle models or the shell models.

We could add here: analysis in structures of 1-dimensional lines or "strings".

If everything is related to everything else, the 5 primary dimensions should manifest themselves in all phenomenon we choose to study.

All dimensions, d-degrees or levels of dimension chains (chapter "Level developments") should be coupled to one another via the d-degree steps.

**An assumption about angle steps:**

There is also in this model a tentative assumption that the d-degree steps geometrically can be characterised by angle steps: in simplest illustration as halvings:

D-degree	5	360°	poles c-ac
	4	180°	antiparallel
	3	90°	orthogonal
	2	45°	sin = cos
	1	22.5°	
	0/00	11.25°	

Such steps could mean an enclosing of the centre, defining a "separate" unit, leaving an open rest angle for the communication with the outer world.

**Some of the geometrical aspects on dimension chains:**

- Dimension chains as geometrically 5-dimensional, designing forces or processes - working on a material of dimension chains polarized to 1-dimensional potentials: that could be one aspect on the relation form/number.
- Dimension chains as a way through angle steps.
- Increasing or decreasing length of the potentials towards lower d-degrees.
- Gradually substantiation of lower d-degrees towards the development of higher levels.
- Quantum jumps, d-degree steps, towards the development of higher levels increasingly translated into processes through secondary development of chains within primary dimensional degree steps.
- Gradually building-in of the 00-pole, the anti-centre.

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