N DIMENSIONAL EYE

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ABSTRACT

Here we will try to present several Hypotheses and theories as to how to represent an ‘n’ dimensional object or space in 3-Dimensions. The aim or goal being that the any static object occupying some space/volume can only be represented or perceived in 3-Dimensions. Time being the fourth dimension if the object is in motion. In case the object/space is an ‘n’-Dimensional object as given by the co-ordinates obtained using sensors and outlined in my earlier papers – please see References 1, 2, 3, 4 and 5 given in the References section and assuming as a norm that a point of an object/space has only length breadth and height (i.e. x coordinate, y coordinate and z coordinate) and all points on the object have only x, y and z co-ordinates respectively only as perceived by the Human eye then the question is how do we represent the n-dimensional points in 3-dimensions. As a precondition each of the co-ordinates are independent of each other for them to be ‘n’ dimensional co-ordinates.

Keywords: Dimensional Eye

METHODOLOGY

Let there be e.g.

‘m’ points (P_m) in ‘n’ dimensions which can be represented as

P_m(x1, x2, x3…xn) for points of an object ‘O’

Hypothesis 1: If we keep any 3 co-ordinate axes of the ‘n’ axes constant and we attempt to map the remaining ‘n-3’ co-ordinate axes or points on the remaining ’n-3’ co-ordinate axes to the designated 3 constant dimensions, if we can prove that

Assuming x1, x2 and x3 co-ordinate axes are constant, then If prove that,

x4 = F4(x1,x2,x3) where F4 is some function of x1, x2, and x3 and x4 is a point on the 4 th dimension,

Similarly for x5, x6, and xn, then

We can say that x4, x5, x6…xn are convergent or inflection points of the remaining ‘n-3’ axes on the 3 constant dimensions. Also it is my belief that if for all points P_m x4 is = F4(x1, x2, x3) and similarly for x5, x6, xn then the object may be termed as a Regular object in ‘n’ dimensions.

Hypothesis 2: For Irregular objects, If we keep any 3 co-ordinate axes of the ‘n’ axes constant and we attempt to map the remaining ‘n-3’ co-ordinate axes or points on the remaining ‘n-3’ co-ordinate axes to the designated 3 constant dimensions, if we can prove that

Assuming xi1, xi2 and xi3 co-ordinate axes for point ‘i’, then if

If prove that,

xi4 = Fi4(xi1,xi2,xi3) where F4i is some function of xi1, xi2, and xi3 and xi4 is a point on the 4 th dimension,
for i=1, 2, 3, 4….m for ‘m’ points
Similarly for xi5, xi6, and xin, then
We can say that xi4, xi5, xi6….xin are convergent or inflection points of the remaining ‘n-3’ axes on the 3 constant dimensions.

**Hypothesis 3:** If we keep any 3 co-ordinate axes of the ‘n’ axes constant and we attempt to map the remaining ‘n-3’ co-ordinate axes or points on the remaining ‘n-3’ co-ordinate axes to the designated 3 constant dimensions, if we can prove that
Assuming x1, x2 and x3 co-ordinate axes are constant, then if
If prove that,
\[ x_i = F(x_1, x_2, x_3) \]
where F is some constant function of x1, x2, and x3 and xi is a point on the i th dimension,
Here again we can say that xi are convergent or inflection points of the remaining ‘n-3’ axes on the 3 constant dimensions. Also it is my belief that if for all points \( P_m \) \( x_i = F(x_1, x_2, x_3) \) then the object may be termed as a Regular object in ‘n’ dimensions.

N.B. But we have stated that each of the ‘n’ dimensions is independent of each other, hence Hypothesis 1, Hypothesis 2 and Hypothesis 3 may not necessarily hold to be valid.

**Hypothesis 4:** Again, if we keep any 3 co-ordinate axes of the ‘n’ axes constant and we attempt to map the remaining ‘n-3’ co-ordinate axes or points on the remaining ‘n-3’ co-ordinate axes to the designated 3 constant dimensions, if we can prove that
Assuming x1, x2 and x3 co-ordinate axes are constant, then if
If prove that,
\[ x_i = F(c) \]
where F is some constant/variable function (as shown in Hypothesis 3) or alternatively a variable function (as shown in Hypothesis 1 and 2) of a complex number/variable ‘c’ and xi is a point on the i th dimension, then
We can say that xi are ‘truly’ points of the remaining ‘n-3’ axes on the 3 constant dimensions as the complex number/variable ‘c’ is independent of any of the ‘n’ dimensions and on the 3 dimensions on which the mapping is to take place. Also it is my belief that if for all points \( P_m \) \( x_i = F(c) \) then the object may be termed as a Regular object in ‘n’ dimensions. The complex number/variable could consist of a real number component and/or a time/angular dependent component which is independent of x1, x2 and x3 (e.g. we could construct a numeric function or some function of either the remaining ‘n-3’ dimensions or some function independent of each of the axes x1, x2, x3, x4, x5… xn.

N.B. Each of the axes x1, x2, x3, x4, x5, ….xn are supposed to be orthogonal to each other in ‘n’ space.).
Or alternatively F(c) could be some Function of ‘c’ such that it is not dependent on x1, x2 or x3 for any of the points \( P_m \) for the remaining ‘n-3’ dimensions.

**Potential Applications**
1. The above procedure might enable us in imaging applications of ‘n’ dimensions.
2. It might enable us to detect new Life forms/organisms.
3. It might enable us in the domain of Astro-Physics for better visualization of the universe.
4. It might enable us to detect/observe and build effective Pharmaceutical drugs, Biological processes/chemistry, virus/germ detection/control, Genetics and Healthcare and Disease Control etc. in general.
5. It might enable us to detect/build more effective Chemicals and/or Materials by knowing their properties better.

6. It might enable us in better Agricultural production by creation of better pesticides/fertilizers/seeds etc.

7. It might enable superior signaling and/or telecom services.

**Scope for Future Research**

1. If the above theories are applied to quantum mechanics and physics and the above applications are applied then it might take these applications to an entire new level.


**REFERENCES**

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