

The Theory of Meanings and the Structure of Reality

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Abstract

Why there are repeated concepts in reality? And why mathematics is capable of dealing with them? There is such a weird structure that connects these two events. This structure is so fundamental that every single being looks so complex compared to it. The true start is not when objects appeared but rather when this structure appeared. And this paper tries to explain such a thing.

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Introduction

Reality is such a mystery. From the smallest particles known to man, to the largest and most disturbing cosmic objects. And the challenge to understand it was given to the mankind. Logic, mathematics, physics and much more were and still are our hopes of understanding reality, But why these work and work very well? And why some concepts in mathematics and physics got repeated over and over again in completely different contexts? There must be a hidden concepts that explain why. And this paper tries to put a model for this concept and the chosen name was ‘The Meanings’.

1 An Overview Of The Foundations

But before that there are some notes the reader should keep in mind

- 1) Definitions and categorizations in this paper are not solid facts and can be improved, and the ones in this paper are simplified versions to the ones from the author vision and understanding, But these build a good idea on how this model works.
- 2) This model discusses a lot of old physics' goals like Newton's laws of motion, Noether's theorem, etc but under its foundations, and no laws will be stated or explained.
- 3) This paper made a symbolic notation for some parts that may help the readers to understand some concepts if they didn't understand the text.

1.1 Meanings

The Definition of Meanings: Meanings are the fundamental concepts that describes reality but the better description is that they ARE reality itself and they are fundamentally different from Rules and Laws.

There are different ways to categorize Meanings:-

In terms of COMPLEXITY: There are different TIERS of meanings and each tier depends on the previous tiers. And individual meanings can depend on the meanings of the same tier and must depend on some of the meanings on the previous tiers, and these tiers are:-

(Tier 0) The meaning of *Existence*.

(Tier 0.1) The fundamentals of fundamentals (they are more fundamental than the rest but not the same as the meaning of *Existence*) and they are two meaning and it is the meaning of *Dependence or Complexity (with respect to the meaning of Existence they are the same but both of them are separate meanings)* and the meaning of *Quantity (the strength of the meaning or the values it takes and when it is 0 then the meaning doesn't Exist Locally nor have any effects)*.

(Tier 1) The fundamentals like the meaning of *Space, Time, etc.*

(Tier 2) The depended fundamentals like the meaning of *Change, Inverses (for a meaning to be the NEGATIVE Quantity of another meaning), Causality, etc.*

And so on

Meanings in the higher tiers CAN'T affect the meanings in the lower tiers UNIVERSALLY (going near the structure of the meaning itself) but they can LOCALLY in a specific ENTITY.

1.2 Entities, Objects and Systems

Definition 1. An **ENTITY** is a collection of meanings with different values (*Quantity*), and entities come in two variants **Objects** and **Systems**.

Definition 2. An **OBJECT** is: An entity such that: Its meanings don't change on their own but rather when it is involved in an interaction.

Definition 3. A **SYSTEM** is An entity such that: If it was left alone in an empty space its meaning would change on their own without requiring an interaction.

There are TYPES for both Objects and Systems depends on what meanings exactly are in their structure. For some examples:-

- 1) For an entity to be “Object type Simple” that means that this object is a simple solid one piece that its parts respond to an interaction the same way or extremely similar, like a rock or a metal sphere.
- 2) For an entity to be “Object type Space” that means that its place in space is accessible to all other entities in its size range and smaller, and this is going to affect the entities and the object, like liquids and gases which resist the *Velocity* of any entity that enters them.
- 3) For an entity to be “System type Viable” that means that this system has *Freewill* and is capable of creating, annihilating and changing the *Quantity* of some meanings Locally for some entities, like humans are capable of creating the meaning of *Change* in *Position* for some entities and annihilating the same meaning for others on their own.
- 4) For an entity to be “Object type Dabbler” that means that this object has the meaning of ‘*Duality*’ built in it which means that this object has more than one meaning that are exclusive to one type or even to one meaning at their prime, like elementary particles which have waves’ nature (its the meaning of *Change* applied to another meaning) and objects’ nature.

Any entity can be defined in the following way and can be thought of as a unique type of sets:

$$\Upsilon := \llbracket A_B \rrbracket * \mathcal{M}, \mathcal{M} = \{a_1m_1, a_2m_2, \dots, a_nm_n\} \quad n = \#\mathcal{M}$$

Upsilon (Υ) represents the entity and it is a set. $\llbracket A_B \rrbracket$ reads “A type B” specify what this entity is. \mathcal{M} reads “Meanings” stores all meanings that this entity has in a set

where (m) represents the meaning and (a) represents the *Quantity* and when it is negative it is the *Inverse* of the positive meaning and when zero means the meaning doesn't exist in this entity. And when the *Quantity* of a meaning can't increase further like the meaning of *Existence* then: only the meaning is written down with *Quantity* one. The symbol (*) is an operator that shapes the meanings in \mathcal{M} with respect to the type, to suit the entity. For an example: The meaning of *Change* (in general) in objects' \mathcal{M} is not the same as systems' TOTAL SUM of the values of this meaning across all components all together even if these two are the same meaning with the same *Quantity*. And even this differ from a type to another.

ANY being can be expressed in this form as long as its type and meanings are known and this is so powerful in proving the existence of any entity even if it was hypothetical or just pure madness. And some powerful calculations that can be done to prove the existence of any entity in any reality. All physics' equations are dealing with the individual meanings of entities, not the entity itself and that's why 'Dimensions' of the numbers (the *Quantity*) are important.

1.3 Interactions

An interaction is when an outsider modifies the \mathcal{M} of an entity by adding new meanings, taking some or modifying them.

When an entity gets involved in an interaction there are two possible outcomes:

Case 1: The entity stays the same type but with different properties, then we add a single \mathcal{M}_I (I stands for Interaction) that contains the new meanings that got added and the values that add up to the old values to represent the current *Quantity* of those meanings.

$$\Upsilon_I = \Upsilon + \mathcal{M}_I$$

where \mathcal{M}_I is what got added to the old \mathcal{M} .

And if there are more than one interaction we add all \mathcal{M}_I to form one set \mathcal{M}_A that combines all of them.

and the meanings that can only take two values like meaning of *Existence* stays the same if nothing came near it.

Case 2: The entity changes its type and by definition it became a new entity, and of course there is a big change to its meanings.

$$\cup_I := [\text{C}_D] * (\Upsilon + \mathcal{M}_I)$$

Where hollowed upsiion (\cup) represents the new entity after the interaction. And the new type $[[C_D]]$ represents the type after adding \mathcal{M}_I to the old entity.

2 Meanings: A Detailed View

2.1 The Meaning of Existence

The meaning of *Existence* is the most important meaning among all meanings and the most fundamental one too. Locally it can take two values only 1 and 0. And any entity or meaning that doesn't have the meaning of *Existence* built in can be considered not real and vice-versa.

Meanings can have the meaning of *Existence* in two ways Universally and Locally:-

- Having it Universally means that: this meaning can exist Locally like the meaning of *Change* for an example and vice-versa (which means if a meaning exists Locally then it exists Universally). And knowing which meaning exists Universally is only possible through observing it Locally. But knowing WHY is a mystery.
- Having it Locally means that: this meaning exists in an entity and it's a property of this entity. But, there are conditions for meanings to exist Locally.

2.2 The Meaning of Complexity

COMPLEXITY means that a meaning is constructed from other meanings and has their properties. Almost all meanings other than the meaning of *Existence* has this property, but this doesn't mean that a meaning ONLY has properties of other meanings. And that leads to another categorization for meanings is in terms of their UNIQUENESS.

There are two categorizes UNIQUE and TYPICAL and the different between them lay inside the meaning itself and its universal structure.

A **Unique** meaning is: what brings a new concept even if it based on another meaning like the meaning of *Change* is based on *Quantity* and it is the core, but the concept of changing is the main property of the meaning. And these meanings can't fully be explained universally through other meanings.

A **Typical** meaning on the other hand is: what doesn't bring anything new like *Velocity* is just the meaning of *Change* applied to *Position* and nothing more. And these meanings can be fully explained universally using the meanings that constructed them, like *Velocity* can be written as: $(C * P)$ which means that the meaning of *Change* (denoted as double struck little c) shapes the meaning of *Position*, this notation works for some meanings but doesn't for others and that depends of how

COMPLEX the meaning is.

NOTE: The last notation ($\mathbb{C} * \mathbb{P}$) is just the derivative $\frac{dx}{dt}$ but with meanings because in this case *Time* is what allows the meaning of *Change* to do its deeds on *Position*.

2.2 The Relation Between Meanings

Universally: the meanings in higher tiers are constructed from the lower tiers like the meaning of *Velocity* is the meaning of *Change* with respect to the meaning of *Position* and both of these are constructed from other meanings and so on.

Locally on the other hand: meanings appear (getting the meaning of *Existence*) or disappear (losing the meaning of *Existence*) when some specific conditions are met. Losing the meaning of *Existence* in most cases happens when the *Inverse* of the first meaning (with the same *Quantity*) appears.

Getting the meaning of *Existence* for a meaning (m) Locally in an entity can be written as following:

$$e_m = 0 + 1 \quad \text{if and only if} \quad R \subseteq \mathcal{M}$$

where R is the required set of meaning and their *Quantity* for the meaning (m) to gain the meaning of *Existence* and it has to be in the entity because this is **LOCALLY**.

• Examples of **getting** the meaning of *Existence*:

- 1) The meaning of *Position* and the meaning of *Directions* will only exist in the universe* if and only if the meaning of *Space* for the universe took a value that allows that.
- 2) For a simple entity to get the meaning of *Velocity* someone or something has to give it the meaning of *Change* with respect to its position, and the meaning of *Position* like directions can only exist in a one spacial denominational system or higher so the existence of these conditions locally is an essential part.

Losing the meaning of *Existence* for a meaning (m) Locally in an entity can be written as following:

$$e_m = 1 - 1 \quad \text{if and only if} \quad \dot{R} \subseteq \mathcal{M}$$

where \dot{R} (R dash) is the required set of meanings and their *Quantity* for the *Inverse* meaning of (m) to gain the meaning of *Existence* (has to be the same *Quantity*) and it has to be in the entity because this is **Locally** too.

• An example of **losing** the meaning of *Existence*:

* The universe is a system so it is an entity.

- 1) When an entity with the meaning of *Change in Position* in some direction interacts with another entity with the same *Quantity* for the meaning of *Change in Position* too but in the opposite direction. In this case both of the *Inverses* appeared together with the same *Quantity* so the meaning of *Velocity* for both entities is going to disappear but the meaning of *Change* itself is not going to, because its *Inverse* didn't appear and these conditions make other meanings appear and so on.

And these two are the most useful concepts, Because entities are just combinations of meanings and their *Quantity* and if we could know the (R) for the meanings and their *Quantity* that make this entity unique then we can know if anything is there or not. All hypothetical entities can be known, But there is a problem and it is that we as humans are not capable of figuring out ALL meanings even if our structure is built for that but thankfully there are 'THE OPERATORS' it is a family of meanings with different structure that deals with the *Quantity* and all kinds of relations between meanings and that is why mathematics is so powerful But they won't work in some cases because our lack of knowledge.

2.2.1 Symmetries and The Conservation of Meanings

A **Symmetry** occurs when an interaction edits \mathcal{M} including adding or changing the *Quantity* of the meanings, but the common one is changing the *Quantity* (with some exceptions) and the meaning that got edited named '*the center of symmetry*', and there is a meaning or bunch of meanings (depends on what symmetry you are talking about) that doesn't change at all and they are known as the '*conserved quantities*'.

A **Symmetry Breaking** occurs when the set of conditions for the *Inverse* to appear is complete after editing '*the center of symmetry*'. For some examples:-

- A simple example of a symmetry: When you change the *Position* of an entity in some space and its identity as this entity from shape to properties stays the same, we call that '*transnational symmetry*'.
- An example of symmetry and symmetry breaking: The meaning of *Change* and the meaning of *Time* are in very good relationship with each other* like *Velocity* and *Temperature* and these are just the meaning of *Change* applied to another meaning with respect to *Time* so if *Time* flowed backward the meaning of *Change* that got applied to any other meaning will go backward as well and nothing will have his *Inverse* at the exact same moment **BUT** if the reversed flow of *Time* will complete the set of conditions for the *Inverse* of the meaning of *Change*, then *Change* itself won't be conserved and the remaining depends on the *Quantity* of the *Inverse*.

* That doesn't mean both of them are always together.

A note from the author:

After this point everything becomes more complicated and debatable and I wanted to share my thoughts and what was written is enough to give the basic idea so stopping here is a wise thing.