An eleatic perspective on sets

Pablo García

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The laws that abide imagination, also abide reality.

1 Glossary

The purpose of this glossary is to provide an initial introduction to some concepts that will appear later on on this text, since many of them are mentioned in the first pages without being explained. The explanation of all of them will take place thoroughly further on.

- Meaning: Concept or sense of a word or sentence.

- Definition:
1. Expression of meaning through a selection of words.

- Deficon: From spanish "Deficón: Definición comunicativa". Communicative definition, shortened as "Deficon". Definition that we use in order make us be understood among humans, using an approximate meaning with which we can be satisfied with its minimal and essential comprehension. This is what we classically understand as Definition 1 and we consider them interchangeable.

- Definition:
2. Element of $\mathbb{D}$. While Deficon is an element of $\mathbb{D}$ as well, we coin different terms in order to be able to distinguish them and be more explicit in some contexts.

- Physical World: Set of phenomena that are registered by any of the five human senses.

- Logic: Apparatus that registers laws, modes and forms of propositions in relation with its truth or falsehood.

- Logic World: Set of statements and ideas that we accept as valid or true following the criteria of logic.
This term has as second meaning: Vision of reality through the accepted truths of logic. Exclusive use of logic in order to interpret reality.

- Metalogic: Apparatus that registers statements or ideas, dispensing with the method of validation of logic.

- Primary definition: Definition that consists of establishing that the definition itself is a definition. It appeals to the primary instance of a definition, e.g. the primary definition of "Word" is "Definition of word".

- Metalogic World: Set of statements or ideas.
This term has as second meaning: Vision of reality from the perspective derived from metalogic.

- $\mathbb{D}$: Set of definitions.

- " ": Emphasizes a deficon.

- "" "": They indicate the regular use of quotation marks[1].

[1] While it is true that in the last section the classic use of " " is adapted back, and its use is accepted indiscriminately.

2 A question

In one way or another, everything arises from a question. In this case, while it is true that there are infinite paths to arrive to what will be here presented, for merely random reasons the following path has been chosen, the echo of the following question:

How long does a word take to be its definition?

The answer to this question will not be treated until further on. First, we will start with an example.

2.1 Twelve

How long does twelve take to be twelve?
In order to be able to answer this question, we first need to give the deficon of twelve. If we consult some dictionary, the definition we obtain is "Ten plus two", or "Natural number after eleven".
We understand, by the first meaning, that there is not a unique definition of twelve, since ten and two also have different definitions in which other numbers are used to define them. That is, we know that twelve has an infinitude of relations that define it. For instance:

0+12
1+11
.
.
13-1
14-2
.
.
$2 \cdot 6$
$3 \cdot 4$
etc.

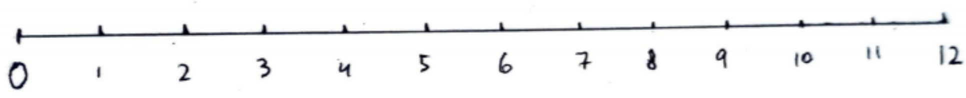


Figure 1: Natural line representing its points up to twelve.

Any of these equalities of this endless list equal twelve. That is, twelve is defined by any of them. Because of simplicity and because of the visual usefulness that it will grant us, we will use the deficon $12 = 0 + 12$.
We say twelve is a natural, integer, rational and real number. Therefore, if we draw it in the natural line we can assign it a place: If we consider the equality $12 = 0 + 12$ and the natural line, we can glimpse a scenario to answer the question "How long does twelve take to be twelve?". Since we can define twelve as the sum of zero plus twelve, we can say that twelve takes to be twelve the exact time that the operation $12 + 0$ needs to be fulfilled. That is, the time we take to travel from zero to twelve, since we understand sums thus, a movement from a position in the line to another position. Evidently, we could have chosen any other operation resulting in twelve, but as it was said, this one is more visual.

Twelve is of course a random example that serves us to generalize the different formulations of the same question: "How long does a number take to be that number?, how long does an operation take to be carried out?, how long does the traveling in the line take?"

Now we consider this question taking it to the physical world.

2.2 In our universe

The physical reality in which our physical world lives consists of characteristics that are expressed as laws which are in principle inviolable. Since we exist in this reality, if we want to solve our question in it we must take into account what conditions operate on it. We will appeal to a well-known condition to try to clarify our question.

Light has the highest possible velocity that can be reached, around 300,000 km/s. We wonder then how this law affects our question. Since we refer to physical dimensions, we must first think about the dimensions of the natural line. The natural line is composed of the succession of points separated by a unit. We know therefore that these dimensions are arbitrary, since the design of what we call "a unit" depends on a human context and structure rather than on an inviolable law given by nature. The quantity of water that today we call a liter and that we accept as a basic unit of measurement of liquids is no more than a quarter or half of other basic units of another historical period that are already in disuse. That is, there is not an alien and impartial deity that decides what is a unit of water, but a human or a group of them, and those humans in their regions or centuries may also change that unit. A natural line is nothing more than the succession of the natural numbers in a line, the separation between two positions is determined by a unit, that unit is random. For this reason, if we decide that our natural line has as unit the kilometer, when we think of a million, or put in another way $10^6 = 0 + 10^6$, the space traveled is from the position zero km to that of a million km. How long does it take a million kilometers to be a million kilometers? Since we are talking about a displacement that occurs in our universe, it is worth asking whether it respects the speed limit of light.

After this question, so many more arise as we shuffle through the different possible scenarios to answer it. We can start with the most physically immediate scenario, which we want to understand as an operation that takes place in our brain. That is, $10^6 = 0+10^6$ is an idea that is created through a system of neural connections. We would need the assistance of a neuroscientist to know in depth the detailed process by which an idea occurs in our organ, but for our purposes it is sufficient to reduce this process to a merely diagrammatic and simplifying aspect. That is, to say that it is reduced to a point of creation of the idea, which we will call I_c, and to another of reception which we will call I_r, which we can understand as a sort of generalization of a synapse. The distance between I_c and I_r will be denoted by ΔI. We now assume that the transmission speed between the two points is c (the speed of light), we then say that the time it takes to get an idea is $t_i = \Delta I/c$. We then say that t_i is the minimum time with which we can have an idea, taking into account that t_i is the minimum process distance. t_i is a constant derived from c that creates a physical condition for the conception of ideas. Suppose I think of any number for which light takes longer than t_i to arrive, that is, a number $x \in \mathbb{N}$ (for example) of km units such that $x/c = t_x$ and $t_x > t_i$, where t_i is the time taken to conceive x. This means that I have taken t_i to travel x km, when the minimum it should take is t_x. We would be again before the same initial situation. We continue the investigation by asking again: is the natural law of maximum speed c violated or not?

Faced with these two alternatives, we will first analyze the second, in which we determine that it is not violated. We ask ourselves why, and this question in turn is also branched into different options. The first one we will deal with is the physically most immediate one. That is, the number thought represented in a displacement on the natural kilometer line is not thought in t_i, but is thought in t_x, by fulfilling the inviolability of the light speed. This means that if we think of a quantity that light takes three minutes to travel (any time greater than t_i), until that time period has elapsed we will not have really thought that number in the natural kilometer line, but we will have thought of it in a natural line of smaller units, such as nanometers. This, however, suggests a problem. When we think of the radius of the observable universe, the distance that light takes millions of years to travel, it should be impossible for us to think of it entirely, which seems somewhat contradictory, because if we are able to have the word, the word and idea of "radius of the observable universe" it is because we have been able to think of it, so that distance has indeed been traveled. This leads us to approach the other possible scenarios within the non-violability of natural law.

There are really two remaining options within this paradigm. The first is a more flexible path and the second a more philosophical one that will serve as a link for the following pages. We begin with the first, which is a continuation of the previous alternative. We say that thought does not violate the speed of light because the thought quantity that would exceed this speed when traveled in reality is not given in kilometers, but there is a natural sub-law that stipulates that the thought units are given on an extensible, compressible scale, such that those quantities are traveled in a smaller speed than c. That is, it is not given in kilometers, in the case that doing it in kilometers would mean exceeding c, but it would be given in nanometers, for example (as we have pointed out above), if in that case it would fall below or equal to c. So there would be a natural condition that would prohibit the thought quantities to be given in certain units, they can only be given in units that respect the speed of light in the time they last to be thought. However, this poses an obvious contradiction, when one thinks e.g. in 10^6 km, being thought faster than c, this natural law would transport it to a sufficiently lower unit, which would mean that it has not been thought in km, when that precisely has been the thought.

We are left with the last option, in which it is defended that a quantity is not traveled by being thought at a speed greater than light by the hackneyed argument that the world of ideas does not belong to our physical world and therefore does not respond to its physical laws. Ideas are an abstract entity not ponderable by the natural structure of our physical world. When we think of a number, a number of kilometers, for example, or any idea for that matter, although we understand that this idea has a physical representation in physical reality (not all ideas have a form as representative as measurements, but an approximation), the idea itself does not belong to it. The known physical reality is composed of what we can designate, and what is designated obeys laws that do not affect the designation.

This is possibly the most generally shared a priori interpretation for many people, sustained by a historical academic tradition that imparts this current. But we must then ask the following question: are not ideas thought in the physical world? So ideas do indeed belong to our physical reality, they are originated and contained in it.

We proceed to emphasize an essential nuance that will be highlighted in later sections:
The laws that we have historically studied and analyzed are those that affect physical nature. By decategorizing the world of ideas as nature in which we also inhabit, we have not bothered to give it the necessary relevance to study its way of acting and its dynamics. In this text we are going to grant it such a natural character, as something present in our physical reality.

Ergo here it is argued that ideas have a place and a role in our universe, and the question "How long does it take for a word to be its definition?" is valid. We have initially deduced that ideas can exceed the speed of light as much as they want, they have no speed limit of their own. Nevertheless, we still wonder about the speed in being. The answer we are about to address is perhaps the most suitable. This answer is about instantaneity.

Before continuing, it would be prudent to clarify a question about duration. Surely we may think that if we embrace a deterministic perspective, we may be given the impression that any idea, quantity, does not exceed the speed of light for the following reason: the initial I_c event of idea creation takes place much earlier. If we understand that what we call I_c event of initiation of the creation of the idea is, as we said before, a neural process, we can also say that this I_c event has been triggered by another previous cause, and without this previous cause, I_c would not have been triggered. Evidently, if we continue this deterministic line of reasoning, we would end up placing ourselves in the Big Bang as the true beginning of the creation of the idea. It would then turn out that the time elapsed to think the idea would be the age of the universe. However, this is an illusory approach. A process is understood as a strict local delimitation between two defined events, although these events have a process in themselves with their own beginning, when we speak of a particular process we speak of its local limits and not of the universality in which it is framed, like any other process. This thought is well illustrated by any mathematical operation. For example, in the expression $20 - 15$ we do not look at 15 with the aim of including its origin in 0, that is, the operation $20 - 15$ is not $20 - 0$, we know how to differentiate between the process of subtraction between $20 - 15$ and 15 as a process itself. However, even if for some reason we wanted to place the origin of any idea in the Big Bang, we would still be able to travel distances faster than c, not only because light by this principle of counting any process since the Big Bang has also taken the age of the universe to travel it, but because we are able to think any quantity, and therefore a quantity that light takes more than 13.8 billion years to reach (approximate age of the universe).

3 Instantaneity

As indicated at the end of the previous section, for our question "How long does it take for a word to become its definition?", the concept of instantaneity plays a fundamental role. This is basically because the first impression we have about a possible answer to the question resides in this concept, for we would say that the answer is: "Instantaneously".

In order to decipher what we mean by this answer, we will first analyze the concept of instantaneity, of which we distinguish two types:

1) instantaneity of time. For two events A and B, the time elapsed between them is $\Delta t = 0$.

2) instantaneity of content. For two events A and B, in which between them $\Delta t \neq 0$, the difference in its content[2] is $\Delta C = 0$.

We appreciate in this distinction that the classical and generalized meaning of instantaneous resides in the first variety, while the second refers to constancy in meaning over time, an instantaneity in time for the definition.

3.1 Instantaneity of time

While it is true that we are all familiar with this type of instantaneity as a concept, we do not always have examples that occur in our daily lives. What this section intends to do is to provide a couple of physical models that reveal an inherent instantaneity in nature through the concept of unity. And it is this concept of unity to which we will resort to explain the instantaneity of content.

Both models to be presented are basically governed by the same principle of unity and therefore manifest an analogous instantaneity.
For the first one let us imagine a pen, whose ends we name as I for the

[2]Content here refers to the own meaning of each event.

tip and F for the opposite end. Let us further imagine that we exert on it an oscillating motion starting from I:

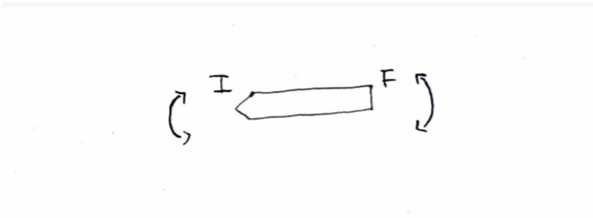


Figure 2: Pen with tip I and end F.

We now ask ourselves: At what speed is this movement transmitted: the swinging of I and F imitating it?
If we think as follows: "I can only move if F moves and vice versa." The answer is obviously that the speed of motion transmission between the two extremes is immediate, i.e., from the time I begins to move until F moves there has been no time difference.

Certainly we can also ask ourselves whether this premise is really true: "Can F really only move if I moves, and vice versa?" The simplest way to approach this is to reduce the scenario to the most basic theory: If we have a straight line, with a start and an end, marked by I and F:

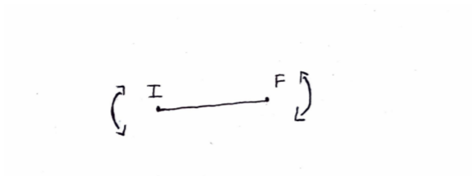


Figure 3: Straight line with start I and end F.

We understand that if I moves it is only because F also does so (we are assuming a non-flexible line, of course). If we have this line spanning the entire observable universe, a minimum motion in I produces an equal and instantaneous motion in F, and hence we obtain an instantaneity running through the universe from end to end. Needless to say, with this model we exceed the speed of light. So, if we change the straight line back to our pen of the example, we can send a pulse of light in the direction of the instrument and at the same time move F in such a way that those movements correspond to writing the sentence "In hundreds of millions of years you will receive a photon that we have just sent you" on a piece of paper where I is located. This means that we have a type of information that travels faster than light, and that is instantaneous. We call this model the unit, concept unit, like straight line or pen, when we operate with them entirely, as concepts, we can appreciate an instantaneity.

The second model, which as said, is of the same style and which we will use to explain in a more pedagogical way the concept of unity, is that of the sphere. We imagine a sphere with lateral poles I and F:

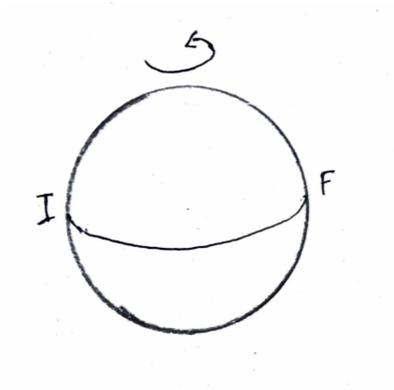


Figure 4: Sphere with initial lateral side I and final F.

As we see, the sphere is rotating, this motion also presupposes an instantaneous motion in the same way as the straight line. For a sphere (again, rigid) the rotational motion that falls on I is not conceivable without that of F. So moving I involves exerting the same instantaneous motion as in F.

We can now ask ourselves if the universe allows everything material that forms our world that we call physical to allow this type of movement to exceed the speed of light. However, it is not necessary to have to meditate in this respect, let us remember that we have stated that the world of ideas coexists with the physical world. It seems then that we would have to make a categorical distinction between the world of ideas and the physical world as two subsets of a set called universe[3]. What we mean by this universe is a question that we will deal with later.
We could proceed in this way for the sake of clarity, but we must not forget, and it is here that we must place special emphasis, that the world of ideas is also part of the universe, for historically we have identified the physical world as the universe. The concept of the universe, as we have said, is a definition to which we will return in later sections. For now, then, let us make a distinction between the world of ideas and the physical world as we have explained above, and to each of them we assign different laws, but let us not confuse the laws of the physical world as those that prevail in the whole universe, for we have already proved that this is not the case.

3.2 Instantaneity of content

We say that an event A occurs in t_1 and an event B in t_2, where $t_2 > t_1$. In each event there is a content C_1 and C_2 respectively. We understand the content as the definition or concept of an element, namely any word. For an instantaneity of content, the necessary and sufficient requirement is that $\Delta C = 0$, so $C_1 = C_2$.

A priori we can think that depending on what time span throughout history we take, we will have an instantaneity of content according to the word. And not only that, we can also argue that the meaning also

[3]The concept of the universe as all that is contained.

carries a connotation that in turn also defines the word, and this connotation is due to socio-cultural reasons that are transformed throughout history and that may not always be present in a definition.
And we can even argue that meaning also changes at the individual level . That means that for the same C there are already a variety and changes in the same t.

We could eliminate this confusion by trying to specify and delimit what we call a given word so that it has a minimum unit of consensus on its C, a common procedure in science. However, here we are going to opt for another way. We are going to concentrate on one C in particular, and this is "Definition".

A word is a linguistic unit endowed with meaning. The meaning is the mental idea or concept of the word. The definition is the expression of the meaning. In this paper we treat "Definition" as the representation of the meaning of a word, in such a way that a synonymy relationship can almost be established between them.

A word implies a definition and vice versa. A word is a symbol that we use to refer to a meaning, the meaning is expressed with a definition. "Definition" is "The act of defining" and "Defining is "To determine with clarity, accuracy and precision the meaning of a word". That is, we leave nothing out of this action to express the meaning of a word. For this reason we take "Definition" as an accurate equivalence to "Meaning", based on this approach.
The definition of a word is its meaning, the meaning of a word is its definition. A word is drawing a letter symbol to represent a meaning, and the meaning is the definition of the word.

It can be argued that although meaning is something abstract, and to understand it there are different definitions, so it is not the same, we repeat that all those definitions that define such meaning of that word can be put together to form a definitive definition in which that meaning is completely contained. This definitive definition we call here

"Definition" and practically we use it interchangeably with "Meaning", as we have established in the previous paragraph.

We have then chosen "Definition" to represent the instantaneity of content. We repeat that we can do the same with "Word" or "Meaning".

The word "Word" although it has taken different forms over time, its meaning has not changed, because it is the very definition of any word. That is, how "Definition" was defined at a time t_1 is irrelevant because the act of defining is precisely that. How was "act of defining" said in t_1 and how is "act of defining" said in t_2? It is a question that does not present a distinction, because even if the form of the word "Definition" were to change (to be written with other letters), its very definition is that, and therefore it has not mutated.
How is a certain word "a" defined in t_1 and in t_2? It already implies that there was a definition present in such a word "a", which means that there was already a concept of definition in both t_1 and t_2. That is, the question is, as we have said: "How is some word "a" defined in t_1 and in t_2?". And it is in fact this question that we use to determine the instantaneity of content. This implies that the "act of defining" exists in t_1 and in t_2, therefore this "act", the "Definition" has not undergone variation of content.
We conclude, therefore, that "Definition" has not changed its content over time, because at any time t, the definition of "Definition" has not changed.

4 The metaset $\mathbb{D}$

In this section, by introducing new concepts and structures, we will present the main idea of this work.

4.1 Formulation of a word

Since we continually use meanings, words, as an instrument in this work, it is convenient that we provide them with a useful formulation in order to be able to handle them more easily. Although the formulation we are going to use here is new, it is quite intuitive.

The idea behind this representation lies in the dictionary definition, a deficon, of a word. We choose a word P from the dictionary. Now let us imagine that to P we assign a number m, which designates its position with respect to the rest of the words. A good idea would be to choose the number it occupies in the dictionary, however, this is not an easy task since nowadays entries are not numbered, so we choose a random number. In addition we also assign it a number n, which is the number of words contained in its deficon. We can represent it like this: P_m^n.

And now comes the key step, we say that P_m^n is equal to the sum of its n ordered elements, that is, its definition. Obviously a word is equal to its definition, a word <u>is</u> its definition, as we have determined in the previous section. Describing a word as the sum of the words that compose its definition is something that although a priori is not completely harmonious, we only have to understand that these words follow each other as a sum, that is, to the first word of the definition is added the following one, and only this concatenation or sum of them gives rise to the word that we are defining. Just as we have mentioned in previous sections with respect to numbers, saying that, for example, $5 = 3 + 2$, and this is its definition (one of its forms). An example to quickly illustrate this is "Person". If we define it as "Human Being", we are saying that it is a "Being" that is also "human", formulating it "Person

= Human + being" and it is this sum that makes "Person" to be "Person". However, it is not necessary to see it in this fundamental way, it is enough to rely on the mere fact that they are words followed by other words, and the sum of all of them in that order result in a definition which is the definition of the word in question.

Before we introduce a specific example, we note that we can also formulate the definition within itself, without direct reference to the value of the elements that compose it:

$$P_m^{n,0} = \sum_{k=1}^{n} P_m^{n,k}. \tag{1}$$

Where the second upper index indicates the position it occupies with respect to the definition. On the left side it occupies 0 indicating that it is the word to be defined.

We illustrate this formulation for a concrete example. We choose the word "Man" and use its definition as it comes in the RAE (Real Academia Española, translated):

Man = Rational human being, man or woman.

We give to "Man" the random value $m = 11$ of position (we recall that the m's that we present here all have this random character). We can formulate its definition initially as we have just seen, just by giving the ordered number of each element within the definition itself, i.e:

$$P_{11}^{6,0} = \sum_{k=1}^{6} P_{11}^{6,k} = P_{11}^{6,1} + P_{11}^{6,2} + P_{11}^{6,3} + P_{11}^{6,4} + P_{11}^{6,5} + P_{11}^{6,6}. \tag{2}$$

As can be seen, we have ignored the comma for simplicity. Since it is not of major importance for the purpose of this formulation, punctuation marks are excluded, although a way could be found to incorporate them without causing disruption.

Next we proceed to reformulate the definition keeping in mind that each element of it is in turn a word with its own characteristic numbers. That is, each of them has a random value m of position and a number n of elements of its own deficon, following the RAE[4].
We obtain then the following:

$$P_{11}^{6} = P_{51}^{3} + P_{40}^{3} + P_{37}^{6} + P_{81}^{4} + P_{4}^{12} + P_{80}^{4}, \tag{3}$$

which we can specify more by writing:

$$P_{11}^{6,0} = P_{51}^{3,0} + P_{40}^{3,0} + P_{37}^{6,0} + P_{81}^{4,0} + P_{4}^{12,0} + P_{80}^{4,0}. \tag{4}$$

It is understandable to think that specifying the position of $k = 0$ is unnecessary or redundant, but it helps to maintain a coherence structure. Once we have reached this point, we make the following reflection:

Each of the words that make up the definition of "Man" has in turn its own defining sum, and the same happens repeatedly with each element of these sums:

$$P_{11}^{6,0} = \sum_{k=1}^{3} P_{51}^{3,k} + \sum_{k=1}^{3} P_{40}^{3,k} + \sum_{k=1}^{6} P_{37}^{6,k} + \sum_{k=1}^{4} P_{81}^{4,k} + \sum_{k=1}^{12} P_{4}^{12,k} + \sum_{k=1}^{4} P_{80}^{4,k}. \tag{5}$$

And as we have just pointed out, this process is repeated with each element of each sum. It seems more or less clear to what question this reflection leads us:

Is it possible that in this way a single word obtains in its definition the total set of words?

One could argue a priori that this is a fact that would depend on how we define each word, since the only way for a word not to be related to the rest is for there to be groups of words that are only defined among

[4] The choice of the RAE as a source is also random and will not be used continuously throughout the work, but merely punctually.

themselves, forming a circle between them, without having any nexus with any other group. In this way it would be impossible for a word, outside this group, to contain the total in its definition, since it has no way of relating to this isolated faction.

This is the first argument that we can find to reason that a word does not have to contain all of them in its definition: there are isolated groups that only define each other. And this is the reason why it would depend on how we write the definition of a word so that it itself does not contain the rest of all words by the reiterative sum of its elements. If we write words in such a way that we can isolate a subset from the rest, then it is not possible. We can debate this question, whether it is really possible to create an isolated intradefinitional group. It is certainly a good mental exercise, however, it turns out that this question is irrelevant to answer the question we have asked, as we shall see.

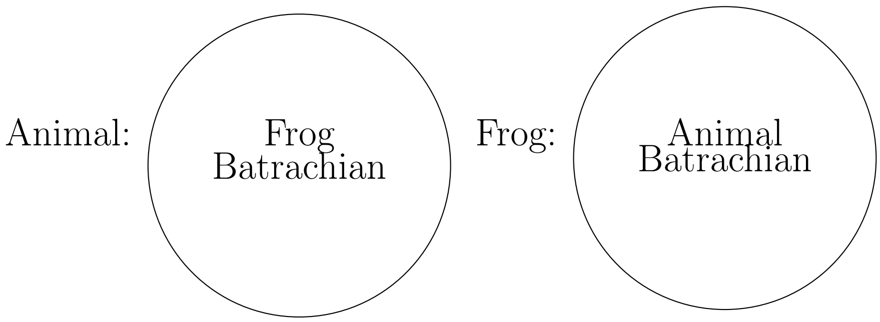
Isolated groups are not only those that would present an a priori problem, but also words that designate something completely specific that is part of a larger set and that serves as an "Example of the set". That is, the problem would appear on a scale from largest to smallest of the sets. To illustrate this thought, let us take the example of "Frog". "Frog" harbors in its deficon "Batrachian animal", however, in the deficons of "Animal" and "Batrachian" there does not appear "Frog"[5]. We infer then that there is an apparent problem with words that host deficons that do not host them, this case of words that are "Examples of the set" of others serves as an example.

However, as we have announced, this is not really a problem. The reason is that the essence of the problem is just a matter of specificity, of how specific we wish to be in the definition. We remember that the wording of a definition is a completely human thing, that we are the ones who construct it. If we wanted to, we could define the word "Animal" by adding to its current definition of "Organic being that lives,

[5]We are talking about the most common dictionary definitions, it is a generalization exercise that serves to show the idea explained below.

feels and moves by its own impulse", the words "such as mammals, ..., batrachians, and of these, frogs, ...etc." That is, we can make a more extensive deficon than the one we are given without missing its purpose. A correctly approximate way to understand it is to imagine Wikipedia articles.
A Wikipedia article, its title, is a word or words, representing a concept, and its content is its definition, what it means. The definition of a concept in the dictionary is a brief definition, a deficon, for practical and quick assimilation, while in Wikipedia the deficon is more extensive for a deeper understanding.
This, then, shows us that an example word from the set, such as "Frog" for "Animal", is only a matter of economy of language, not something essential that is given by a natural law.

We can visualize this argument graphically by giving "Animal" a circle with the words that contain it, i.e., its set, and in the same way to "Frog".



We can appreciate then, that each set is part of the other, each is an element of the other, they contain each other. This visualization is also present in Wikipedia, as we can see how each word in an entry that serves as a link to its own entry also represents this containment of sets. In the entry for "Animal" we can see "Batrachian" and thus "Frog", and vice versa.

Therefore, as a summary of this approach, what in principle may be a problem when it comes to achieving that a single definition contains all of them, caused by the existence of words that are defined by others but do not appear in the definitions of these that define them, is nothing more than an illusion generated by a simple wording of their definitions. All those words are present among their definitions, either by a more extensive definition, or because they are contained among them in their circles/sets of words that belong to them. The example of Wikipedia serves to illustrate this.

And this matter of specificity is an interesting and important issue in this work, since, as we will now explain, it is the reason for explaining the main concept. While we have solved the apparent problem of the "Example words of the set", we still have this difficulty in those isolated ones that we have initially referred to[6]. Well, this is a problem that we will also solve using the notion of specificity, now in another way. If before we have spoken of the content of a definition as not very extensive within its possibilities, or not very specific, this being the reason why the "Example words" of the set were isolated, now what we will do is precisely to use this little specificity in order not to leave any element isolated.

We understand that the least precise, least specific form of definition of any word $P_m^{n,0}$ is the following:

$$P_m^{n,0} = P_{15}^{1,0} \tag{6}$$

And what is this word $P_{15}^{1,0}$? It is "Word". Any word can be easily defined with just $P_{15}^{1,0}$. The rest of the elements we add to it are what measures its specificity. "Word" is the minimally specific. "Word + that + meaning +..." with the words of our choice is how we construct a deficon as we know it, more or less specific.

So any word, such as "Animal", "Batrachian", "Frog" = "Word". Because of this, this minimal specificity in the definition, we have that

[6]Of course, to solve the problem exposed by those isolated definitions, we can also use the extensive potential wording. Since it is up to our power and depth to create definitions, we can do so skillfully enough to include that isolated faction.

equality yields "Animal = Batrachian = Frog" in any direction and permutation. Of course, by induction, we infer that any word $P_m^{n,0} = P_{m+y}^{n+x,0}$, for all $n, m \in \mathbb{N}$ and $x, y \in \mathbb{Z}, n + x > 0, m + y \geq 0$[7]. That is, any word is equivalent to any other word.

Therefore, by investigating the specificity of a definition we have obtained two results:

- First: The average specificity of a definition is the one presented to us in dictionaries, a deficon, in which we try to be brief and concise for purely pedagogical and human reasons. However, a definition can be made more specific simply by adding more defining elements that expand the total length. There is no theoretical limit to how long a definition can be. Thus we can see, as we used in the example about Wikipedia entries, that the definition of a word potentially contains the rest. That is, any word is equivalent to any other word because they all equal the total set. The total set of words is an unordered set, so the order of appearance of the elements does not matter, knowing also that each of them is equivalent to "Word", as is the second case.

- Second: Using the opposite direction of the limit of specificity, i.e., instead of extending it we try to reduce it to the theoretical minimum, i.e., defining just using "Word", we obtain that each word is equivalent to another through this equality.

We can formulate these conclusions as follows:

For any word $P_m^{n,0} = \sum_{k=1}^{n} P_m^{n,k}$, for all $n, m \in \mathbb{N}$ y $x, y \in \mathbb{Z} \forall n + x > 0, m + y \geq 0$:

$$\lim_{n \to \infty} P_m^{n,0} = P_{m+y}^{n+x,0}, \tag{7}$$

$$\lim_{n \to 0} P_m^{n,0} = P_{m+y}^{n+x,0}. \tag{8}$$

[7] There is no negative order for m, and n must be defined by at least one word. This is a mere convention.

4.2 Presentation of the metaset $\mathbb{D}$

Inspired by the previous section, let us now think of a set containing all words. We coin under the symbol $\mathbb{D}$ the set of definitions. That is, this set has as elements everything that has a definition. A word is nothing but the title of a definition, in the same way that the title of a book is only a name to call the story that composes it, its definition, what makes it that book.

Let us recall what the final result of the previous section was: all words are equivalent to each other, either because they are all words or because they are all equal to the total set of words. This leads us to think that a word equals the set $\mathbb{D}$. In other words, everything that can be described by a definition can be named through a name, a word, and this word is included together with the rest in the definition of any other word, just as they are all included in its definition. This means that, effectively, a word harbors in its definition all definitions, so that a word is equivalent to the set $\mathbb{D}$:

$\mathbb{D}$={Anything that has a definition, that can be described in words, i.e. $P_m^{n,r}\ \forall n, r, m \in \mathbb{N}$},

and at the same time

$P_m^{n,r} = P_{m+y}^{n+x,r+d}$=D $\forall n, m \in \mathbb{N}$ y $x, y \in \mathbb{Z} \forall n + x > 0, r + d > 0, m + y \geq 0$.

As we have already realized, we have found a set in which each element is the set itself. It is certainly difficult to imagine this sort of entelechy, since it contains a discourse ad infinitum. However, in the following sections we will find a form of representation for this set that will help us to work with it and represent different operations.

4.3 Characteristics of the metaset $\mathbb{D}$

The conception of the set $\mathbb{D}$ is in itself already revealing, however, many of the consequences derived from it that we investigate here as its properties harbor in turn relevant content that we will use in the following sections.

The first property to note about $\mathbb{D}$ is that it is atomic. This means that since any definition is composed of other definitions, if one decided to divide or "split" a definition, one would only find definitions. Even if after splitting a certain word $P_m^{n,0}$ into, say, two parts, we get two sets of words that seem to have no clear meaning for our human reasoning[8], we can understand that this series of words can be defined as "Result of the division of the word $P_m^{n,0}$ in two". For this reason, no matter how much we decide to split a word, for we will always find that it belongs to $\mathbb{D}$, we can always define it as "The X partition of $P_m^{n,0}$".

We realize, with regard to the above, that for any word P_m^n[9], if we subtract any other word P_{m+y}^{n+x}, given that both are equal, they give a result of 0:

$$P_m^n - P_{m+y}^{n+x} = 0. \tag{9}$$

However, 0 is still a definition, another word, so it is equal to any other word. For all $k, z \in \mathbb{Z} \,\forall\, n + k \geq 0, m + z \geq 0$:

$$P_m^n - P_{m+y}^{n+x} = 0 = P_{m+z}^{n+k} = P_m^n = P_{m+y}^{n+x}. \tag{10}$$

It is also worth noting as an essential property of $\mathbb{D}$ the ability of all its elements to be what we will call "a primary definition", that is, any word $P_m^{n,0}$ has as its definition "Definition of $P_m^{n,0}$"[10]. This type of method for

[8] Which is also not an impediment, the filter of coherence is a human factor belonging to the logical world as we will explain in more detail later. If we divide in two the deficon of "Dog= Domestic canid mammalian animal" as, for example, "domestic canid ma" and "malian animal" are still both elements of $\mathbb{D}$ because they are definitions, although on the other hand their use as deficon is questionable since it does not allow a quick and easy understanding of what is being defined.

[9] It can be presented as $P_m^{n,0}$ or P_m^n, the latter form being a simplification of the former.

[10] We also add that while the primary definition can be considered a first instance, definitions such as "The X partition of $P_m^{n,0}$" would be a second instance. Both cases appeal to metalogic (to be discussed later), which seeks basic, unfiltered existence, in opposition to logic.

defining words maintains a close relationship with the following property: the domain of $\mathbb{D}$.

We understand as the set $\mathbb{D}$ everything that has definition, as we have explained above. Its domain is everything that is definable and therefore has definition. We find that this domain encompasses simply and essentially everything. We may begin by objecting that there are words we do not yet know and therefore have not defined, however, we employ the primary definition and say that "words we do not yet know and therefore have not defined" is a definition, a subset of elements within $\mathbb{D}$. In the same way we can ask what happens then with those impossible entities or entelechies that by ""definition"" cannot be defined, as we have just seen, it suffices the sole use of the primary definition to group that subset of $\mathbb{D}$ with its definition of "impossible entities or entelechies that by ""definition"" cannot be defined".
There is in turn a fast way to understand the dimension of the domain. "Everything that exists" and "Everything that doesn't exist" are definitions, so both subsets are in $\mathbb{D}$ contained. Certainly this may open up questions about existence and non-existence as sets, and the congruences and incongruences one may derive from them, as, e.g., if non-existence exists, is it then non-existence?, and so on. One may attempt to resolve such issue in the following way:

We call I the set of non-existence, and we use as a tool the symbology "$\exists$ in" = " $\in$ ", meaning that something that "exists in = is in", a formulation to be able to say "exists". Before continuing we should make a clarification regarding this notation, which is a change to the axioms for Zermelo-Fraenkel sets. For these classical axioms it is considered that a set cannot be an element of itself and in this notation it seems that a reference is made to that[11], however, what is meant here

[11] Although it is true that this axiom is the first thing we undo in this work. Recall that we have said that any word is the set of all of them, so it contains itself. This is a precept that appeals to metalogic and is not accepted in the logical world. To expose the metalogical nature of reality as the great whole in which we live is perhaps the main objective of this text. We discuss this in more depth

by the symbol $\in$ is something closer to $\subseteq$. That is, when we say that a set A is A, we express it as $A \in A$. We understand that saying A is in A means A is A. As a rudimentary example we can imagine that "Segovia is in Segovia" means to say that "Segovia is Segovia". If it were not contained in itself it would not be itself. This is the purpose of such notation, to be able to say "is" through saying "is in". We could establish a parallelism following Zermelo-Fraenkel, saying that A is A ($A \in A$) through $A \subseteq A$, since any set is a subset of itself. However, as we have said, we will follow this type of notation here with the assigned meaning.

Returning to the set I, we say that

$$I = \{\text{Set of elements which don't have the property } \in\}$$

That is, I is the set of those elements that do not exist. We say then that if the nonexistence I exists (it has the property $\in$), then $I \notin I$ (because I only accepts that which does not have the property $\in$, in terms of ZF then I is not a subset of I, $I \nsubseteq I$), so $I \neq I$ (if a set is not in itself, it is not itself, in terms of ZF: given that a set has itself as a subset, if it doesn't have itself, then it is not itself, i.e., it is not equal to itself).
If nonexistence I does not exist (does not have property $\in$) we have that $I \in I$, (so then it does have property $\in$) but then $I \notin I$ and therefore $I \neq I$, as in the previous case.

We can summarize the situation more succinctly as follows:
I is the set of elements a that are neither in I nor in its complement I^c[12], i.e.

$$I = \{a \notin I,\, a \notin I^c\}$$

So if $I \in I$, then $I \notin I$, but then $I \in I$ (always for $I \notin I^c$ obviously), and so on ad infinitum. It happens in the same way starting with $I \notin I$.

in the last section.

[12]Neither in non-existence, nor in existence. A more exhaustive way of saying "does not exist"

Knowing that this notation is equivalent to saying $I = I$ for $I \in I$ and that $I \neq I$ for $I \notin I$, the infinite series that we face taking any of the two options is the following: $I = I \neq I = I \neq I = I \neq I = ...$ We put their $I = I$ together as a single I and we get the infinite series for $I \neq I \neq I \neq I \neq ...$, which by sheer repetition, just like saying $2 \cdot 2 = 4 = 2 \cdot 2 = 4 = ...$, we have that $I \neq I$.

Be that as it may, it seems that we arrive at the situation that $I \neq I$. An uncomfortable situation for the classical academic tradition, since this result is clearly a contradiction and indicates that there is something wrong in the approach or it warns us that we are facing an impossibility. However, this does not pose any kind of problem for our discourse. I has a definition: $I{=}I \neq I$. That is its definition[13] For the majority it presents a drawback, due to the fact that there is a custom[14], of not accepting this type of premises (logical world). We must say that for the idea we portray it does not matter to us how this type of situation is considered in other disciplines or traditions of thought. In our premises and discourse this definition is perfectly compatible, and what is more, it confirms the essence of the idea: every kind of definition is a definition, including the most extravagant and ""problematic"" ones like

[13] $I = I$ is a premise that we understand easily, it is an obvious logical assertion. We say that to this equality is equivalent to $I = I = I \neq I$, which is another way of saying $I \neq I$, since as we have said in the previous paragraph $I = I$ is an obviousness or redundancy that is equivalent to saying I. As an additional note (which we will discuss in more detail in the last section), we want to point out that in order to explain and be understood among ourselves we use logical structures and premises, such as these equalities and properties of logic. We use logic to explain metalogic, that which is prior to or beyond logic, because it is inevitable that in order to understand each other we use the components of the logical world. If we want to understand each other in a conversation we must always keep in mind and use the deficons, and not the limits to 0 or infinity of these. The same is true for everything. We live as human beings in a logical world and we cannot understand it without using its structure. Here we intend to illuminate the reality of the metalogical world, and it is inevitable for us to use logic to do so if our goal is that we can understand its meaning. As we have said, this last remark will be treated more especially in the last section.

[14] By custom we mean a logical academic tradition.

this one, putting the theory on a plane beyond logic, the metalogical one.

The set $\mathbb{D}$ contains that which is definable or is a definition. It does not matter if it is something that in the logical world is not accepted, because in logic it does not make sense. There is no logical filter to accept the elements or premises in $\mathbb{D}$. It is metalogical, since there are no laws of truth or falsity and therefore of admission.

We have followed a series of steps and premises to give a communicative definition with which to understand to a certain extent satisfactorily what we can understand by non-existence as a whole. Respecting that definition we have built a structure around it obtaining a consequence that for certain academic sectors of tradition would present a problem but certainly not for our idea. Everything with definition belongs to $\mathbb{D}$, no matter how uncomfortable it may be, it does not disturb or contradict the bases, precisely because the set $\mathbb{D}$ accepts ""contradictions"".

We had anticipated that the domain of $\mathbb{D}$ is everything, since nothing is outside $\mathbb{D}$, since "What is outside $\mathbb{D}$" is in $\mathbb{D}$.
We can represent $\mathbb{D}$ as follows:

$\mathbb{D}$={Set of elements with property $\in$ y $\notin$}

This is one way to encompass any element, and following the same line as in the definition of the nonexistence set, we can be just as incisive by defining $\mathbb{D}$, for every element a, with $\mathbb{D}^c = \mathbb{D}$, thus:

D={a $\in \mathbb{D}$, a $\notin \mathbb{D}$}

One of the reasons for choosing this definition is that we can arrive to the situation already known for non-existence, i.e.:
If we have an element a such that $a \notin \mathbb{D}$, then by the definition of $\mathbb{D}$ we have that $a \in \mathbb{D}$. This, we suppose, might cause it to alter the very rules of such an element so that a=$a \neq a$. And as we know from what we have discussed about I, this is a definition, so it belongs to $\mathbb{D}$.

As a brief corollary in this regard:

If I$\notin \mathbb{D} \Rightarrow I \in \mathbb{D} \Rightarrow I \notin I \Rightarrow I \in \mathbb{D}$.
That is, if $I \notin \mathbb{D}$, then, because it has the property $\notin$, it is in $\mathbb{D}$, $I \in \mathbb{D}$. But if I has the property of $\in$, then $I \notin I$, and by having precisely that property $\notin$, we have that $I \in \mathbb{D}$.
The last three parts ($I \in \mathbb{D} \Rightarrow I \notin I \Rightarrow I \in \mathbb{D}$) present an a priori infinite loop, but as we did with I, it reduces to a single relation: $(I \notin I) \in \mathbb{D}$. This can be expressed in two segments as follows:
- For $I \in \mathbb{D}$, we have that $(I = I) \in \mathbb{D}$.
- For $(I \notin I) \Rightarrow I \in \mathbb{D}$, we have that $I = I \neq I \in \mathbb{D}$.
In other words, I for being I is in $\mathbb{D}$, and I for not being I is in $\mathbb{D}$. This is just a way of structuring that $\mathbb{D}$ is inescapable, and that every element belongs to it.

It is understandable that initially anyone thinking in the logical tradition of the last few centuries would consider this to be an error because it harbors apparent paradoxes in that tradition. However, this certainly does not affect the set $\mathbb{D}$ and its domain. The set $\mathbb{D}$ is thus defined and is consistent with itself. Moreover, $\mathbb{D}$ is such that any paradox about itself is something that accepts and reinforces it in any case. This reticence of part of the human logical tradition corresponds to how we treat the physical world that we discussed in the first sections, that school of thought that has dominated the academic world to this day. Both what belongs to the physical world and how we think about it, and what belongs to the world of ideas are elements of $\mathbb{D}$. There is no other way to make an idea understood than using the instruments given in the logical world[15]. For this reason it is understandable, as we have been saying, that when we use our language which belongs to the logical world in order to express the idea, alarms go off indicating that there is an error

[15] Perhaps a structure or language can be established that transcends it, but that is something we do not intend to find here. We only intend to illuminate the metalogical idea of $\mathbb{D}$, and for that we use the language at our disposal, which is logical.

or misunderstanding. We use logical language because it is inevitable to use it, and for that reason it is inevitable that incongruities appear, but we repeat, they only exist in that logical world. It is certainly difficult to want to express the metalogical with the logical, knowing the restrictions that the latter imposes on itself and on our own thinking accustomed to it. The objective is to try to approximate through the inevitable logical world an idea that lives beyond it, such as the metalogic, which does not understand such filters and logical validations, and which we use to give an understanding of the magnitude and concept of $\mathbb{D}$. We will return to this aspect in the final section as we have already pointed out.

The domain of $\mathbb{D}$ also encompasses a time factor. If we contemplate the universe as the physical setting in which we live, we know that its beginning is at the Big Bang. "Universe" of course is part of $\mathbb{D}$, and we now wonder when $\mathbb{D}$ was created. "That before $\mathbb{D}$" is an element, but one may ask then, don't we need someone to perform a definition for $\mathbb{D}$ to exist? This undoubtedly appeals to the inevitable human component by which we always filter everything. This aspect is irrelevant, for the reason that if we suppose that there was a time when $\mathbb{D}$ did not exist but there was still "something", saying today, as humans, "something before $\mathbb{D}$", we are already placing that "something" prior to $\mathbb{D}$ as belonging to $\mathbb{D}$, so there was never anything that was not in $\mathbb{D}$. The same is true for "that after $\mathbb{D}$".

Continuing within the timely perspective of $\mathbb{D}$, another question we can address is its instantaneity. We have already said that "Definition" is instantaneous of content, this means that therefore, since any element is a definition, we have that every element is instantaneous of content. Which we can formulate as follows:
Since what we are really asking is how long does it take for the element a to be a? through the question of the instantaneity of content, in order to answer it there must be a time when the element under consideration did not exist, and the change in content is from when it did not exist to when it does exist. That is, there was a time when $a \in I$, but since we

know $I \in \mathbb{D}$, and since every element in $\mathbb{D}$ is instantaneous in content because it is a definition, we get our answer.

Another interesting feature present in $\mathbb{D}$ is one of the forms of representation of this set, which we will discuss in the next section.

4.4 Representation of $\mathbb{D}$

The representation of $\mathbb{D}$ aims to facilitate the understanding of the idea by visualizing it. The representation that has been chosen is not unique, it is only one that is more satisfactory in principle to be able to represent $\mathbb{D}$, although it is true that the circumference, the representation we have chosen, is a figure that maintains a close relationship with this work.

In order to represent $\mathbb{D}$, we choose a circle in $\mathbb{R}^2$. This circumference of radius $r \in \mathbb{R}$ is made up of $N \in \mathbb{N}$ elements, such that $N = 2\pi r$. The first question to be addressed, before continuing with the representation, is about the finiteness or infinity of the set $\mathbb{D}$, since we have established a number N of elements.

The set $\mathbb{D}$ can be represented as a finite set. Any term, phrase, etc. is one more element of $\mathbb{D}$, and therefore confers an infinite dimension to the set, however, we can group the elements in such a way that their representation is finite. If we choose the set of words in a dictionary or entries in the universal encyclopedia, whatever compendium we fancy as N, we wonder what happens to everything that is left out that is not in them recorded, such as any term we make up, new words to come, phrases, etc. The solution lies in the fact that we can group all those words into an element that would form their subset, such as "New words" or more efficiently "Any term not recorded in the reference compendium to create this circumference of N elements". In this subset of infinite character is everything that we do not specify. They are not left without representation in $\mathbb{D}$, they are simply represented in the subset that encompasses them in order to give a character of finiteness to the representation. Similarly with numbers, we have infinitely many of them, but we can represent them finitely under "Number" (this will become particularly important in the later section). Through this method of subsets to contain the infinity of elements we can represent $\mathbb{D}$ in a finite number N.

Once we have clarified the finite aspect of the representation, we proceed to explain the justification of the form. If, as we have said, by using subsets we can choose the size of N, the radius r works as a parameter to measure how many elements we allow. If the circumference in $\mathbb{R}^2$ has as center at the origin and a radius r, it therefore obeys the equation $x^2 + y^2 = r^2$. Because the number N of elements is somewhat arbitrary depending on our choice, we can either expand r towards infinity trying to include everything to prove maximum specificity, or we can make it tend towards 0, where the only element would be a single point representing all $\mathbb{D}$ (e.g "Definition", as we have used above). So the use of this representation system caters to the fact that $\mathbb{D}$ can be understood as a set of subsets that we can select from infinity to one.

The representation of $\mathbb{D}$ then consists of a number of elements N and a radius r. We project it onto a Cartesian plane with center at the origin in this way:

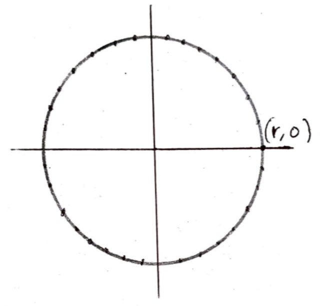


Figure 5: Circumference of radius r.

The point that we have pointed out in the origin corresponds to what we have previously exposed, the size of N that depends on r is an arbitrary choice and we can really represent all $\mathbb{D}$ with only one point, which represents the one that we have pointed out in the origin, the limit of when r tends to 0. This element can be represented by any other element, although we have suggested "Definition" before as an example, we do not forget that any word is "Definition", so any element can represent $\mathbb{D}$ in its entirety. So we can see this point as the result of eliminating one element at a time from N by reducing r consequently, the circumference shrinks progressively until we obtain only one element. The element that we obtain, as we have pointed out, does not require favoritism, it can be any.

Having already IMAGE 5 as a reference, we can represent the definitions of the words as we will explain below:
We call a_i (where $0 \leq i \leq N$) the elements of $\mathbb{D}$, the center element is named a_0 and the circumference surrounding it is C_0. To represent the deficon of a_0, we simply connect in order of appearance the elements of its deficon a_i in C_0. Say, for example, that the deficon of a_0 has 7 elements, the first one we mark as a_{p_0} and the last one as a_{f_0} as shown in IMAGE 6.

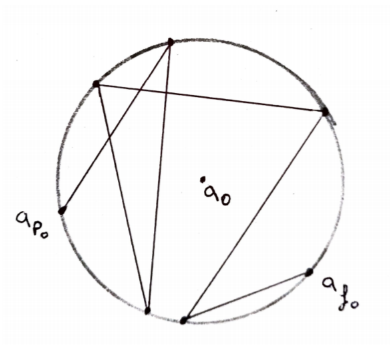


Figure 6: Deficon of a_0 represented as the line that follows the order of appearance of its words.

This is a way to represent the deficons of any element in $\mathbb{D}$. We can quickly see that there is a circumference for each element, that there is a C_i for each a_i. That is, every element on the circumference is the center of another circumference . We have chosen a_0 as the center for this circumference , but as we have been repeating, this is a random choice, since any a_i can be the center. So any a_i is the limit of a circle of the same size N when r tends to 0, and consequently have a circle C_i around it, in which we can also represent its deficon, as shown in IMAGE 7.

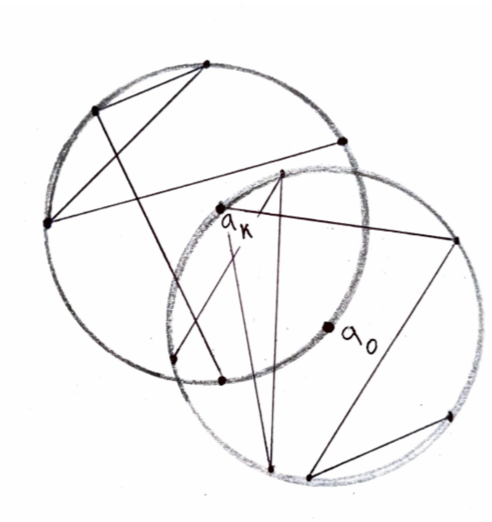


Figure 7: In this case of IMAGE 7 we have chosen an element a_k (where $k \in [0, N]$) belonging to the deficon of a_0.

After we have decided on a size N for the representation of $\mathbb{D}$ and we have understood that each element of the circle is in turn the center of a circumference of the same size, the question arises: since all elements contain circumferences, what is the relationship between the intersections of these circumferences? We can illustrate this question with IMAGE 8.

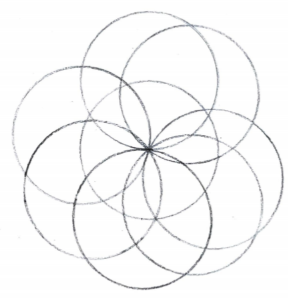


Figure 8: A finite and varied sample of circumferences is shown for a few elements.

In IMAGE 8, if we wanted to represent all the circumferences of the elements of the circumference C_0 we would obtain a circle for a circumference of radius $2r$, as in IMAGE 9.

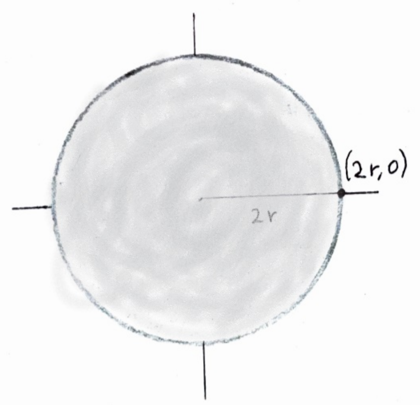


Figure 9: Result from representing every C_i from every a_i of C_0.

Of course, each of these points is in turn the center of another circle of the same size N, and so on ad infinitum, occupying all $\mathbb{R}^2$, but let us first deal with the situation in the space generated around C_0. We ask then, how are these intersections.

We establish the nomenclature that we have briefly indicated in previous paragraphs to be able to work more easily: We call C_i the circumference of an element a_i of C_0, the elements of C_i we call a_{ij} and the circumference of an element a_{ij} we call C_{ij}, and so on ad infinitum adding subscripts (which will not be necessary), but as we have said, we are only going to work now with a_i and the a_{ij} of its C_i. In IMAGE 10 we show what the scenario is.

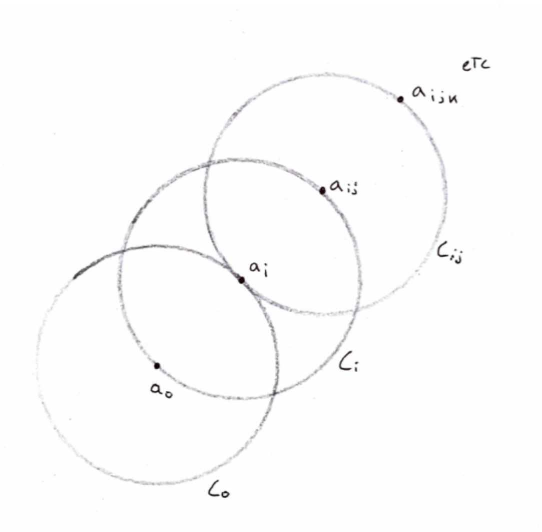


Figure 10: Succession of circumferences for each element choosing the same angle.

When we ask about how these intersections are related, what we really want to ask is if these respect that each intersecting element is the same, that is, if $a_{1,34}$ intersects with $a_{45,7}$, we want to know if the element of $\mathbb{D}$ that corresponds to them is the same, i.e. if $a_{1,34} = a_{45,7}$. This is an essential aspect since intersections represent an equality between elements, and if we find that there are intersected elements of non-equal values, we would have to accept that in fact those two in principle non-equal elements are equal.

Before investigating this question, we can establish that all a_{ij} intersecting a_0 are equal to the element that a_0 represents and that on no circumference C can the same element appear more than once.
A priori, we are presented with two contrasting scenarios to consider:
- All the elements of the circumferences are placed in the same order, i.e. $a_{ij} = a_{kj}$[16].
- The elements do not follow any kind of order in the circumference and each circumference can have a different configuration.

If we look at the first scenario where the same order exists on each circumference, we soon find that inevitably elements of different values intersect as can be seen in IMAGE 11, where only four of them are shown, inferring that this is the case with each C_i. Understanding that every point in the plane is the object of intersection of circles, taken ad infinitum we quickly find that every element is equal to every other element.

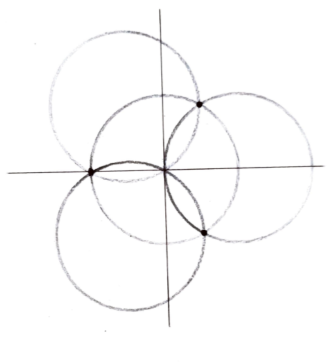


Figure 11: Intersection of four circumferences. If the order is fixed, the intersected points do not coincide in values.

The second scenario, which allows more freedom of action, presents more initial complexity. However, we find a quick and easy solution by con-

[16]In other words, the circumferences have the same elements in the same place.

sidering only one case. We call a_k a point of intersection inside the circle of C_0 by two circumferences C_m and C_n, as shown in IMAGE 12.

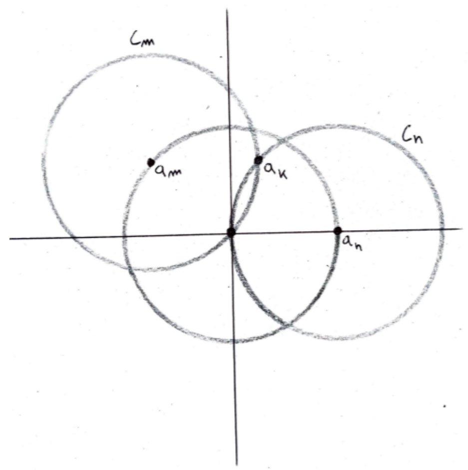


Figure 12: Point of intersection a_k between two circumferences C_m y C_n.

a_k, like any point in the plane, is the object of intersections (remember that each element is the center of a circle of size N) of circumferences all around it, as shown in IMAGE 13:

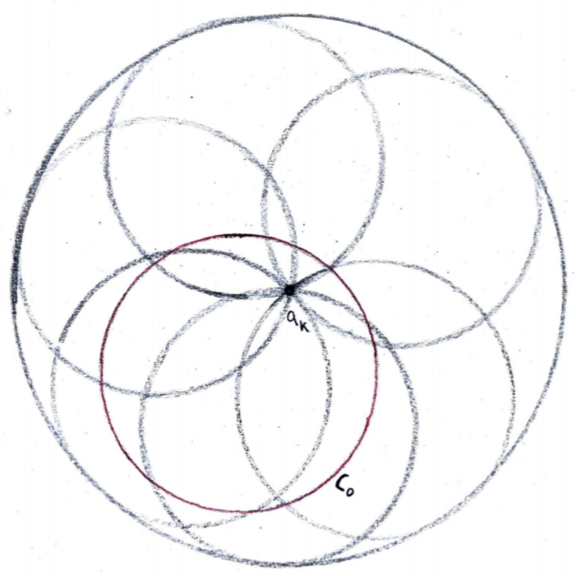


Figure 13: A circle of radius $2r$ formed around a_k. Inside this circle is contained C_0, where a_k is originally located.

Now, as we can see in IMAGE 13, a circle of radius $2r$ is created around a_k. This circle is formed by circumferences that have a_k as an element, and this means that in no other point of the created circle there can be another a_k because as a precept it cannot appear more than one element per circumference. This means that in our starting circle C_0 there is no such element a_k(since C_0 is inside the created circle as we see in IMAGE 13), and not only a_k, but any element a_i of C_0, since it happens in the same way for all the elements. We are therefore faced with the paradoxical situation (in logic) that if the elements exist at any point then no element exists at any point.

Looking at the result we get from both scenarios, we give up on the precept of coherence that we established at the beginning, and allow the elements to appear more than once per circumference, in order to see if in this way we can arrive at a different result.

We concentrate on the same point a_k as before. We now say that we allow only one of the circumferences that host it to have another element of value a_k, and for ease we say that this circumference is the initial circumference C_0, as shown in IMAGE 14.

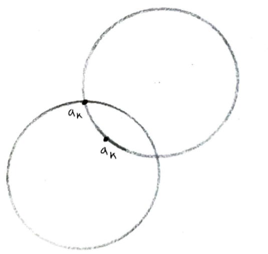


Figure 14: a_k en C_0, with another circumference where we have accepted a second element a_k.

This circumference has two values a_k, so there is an element $a_{k+x} = a_k$, where $x \in \mathbb{N}$. We accept this equality between a priori non-equal elements in order to continue. We continue on this new circumference, we now look at a point a_n (where $n \in (0, N)$) which we place in the same place that a_k had with respect to C_0 (for mere visual ease). And now, if we do not want this new circumference to be devoid of the element a_n, we must proceed as with a_k, that is, choose a point that contains it for the second time, and for ease we choose the same place that occupied the other a_k in C_0 as we see in IMAGE 15:

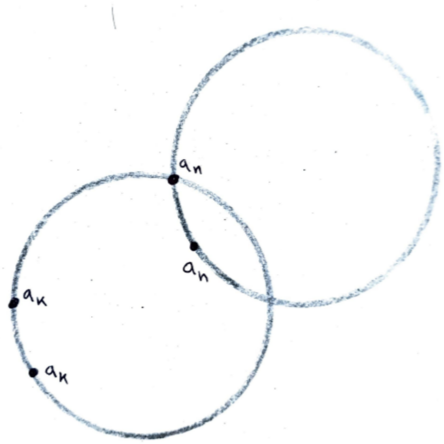


Figure 15: Consecutive operation of the previous image.

So now we have another equality of a priori distinct elements that we must respect: $a_{n+y} = a_n$ where $y \in \mathbb{N}$. We can stop here, since it is sufficiently clear that the infinite series of circumferences that follow will continue to create equalities between different elements until all elements are equivalent to each other.

It seems that no matter what coherence conditions we want to implement in this representation system, it is impossible to obtain a result in accordance with the logical satisfaction that allows us to consider a result as valid. And this, precisely, is what this work intends to reject (the last section deals with this aspect). Clearly we can conclude that if we choose this form of representation for $\mathbb{D}$, the only way to understand this representation without an apparent problem is to accept that all the elements are different and the same. In this way, we can naturally understand the result we have been obtaining. And what is more, according to the theory that has been exposed here, it is perfectly congruent, since we have done nothing more than to defend and establish that every definition is equal to each other, that every value is a definition.

The result that we have obtained corresponds satisfactorily with the idea that has been developed in the previous sections, for this reason we have preferred this way of representation over others, a reason that lies in pedagogy.

At the beginning, one creates a circumference where the definitions are finitely represented, on this circumference through connections between elements we can represent the drawing of the definition of a word, which is, indeed, only a form of representation. However, when one realizes that the size of the circumference is arbitrary and that it can be reduced to any point by the initial equality established between all definitions, it turns out that each point is the center of a circumference like the one we have initially created (or of any other size, we restrict ourselves to this one for ease of understanding). Thus, by minimally investigating what is the juncture between all the elements present, it is concluded that each and every one of them are equal to each other. This journey from an initial human/logical/physical/ perspective to the conclusion of a metalogical reality will be introduced in the following section[17] and will be treated with special emphasis in the final section as mentioned above.

[17] Which we will call "bridge".

5 Metanúmeros

This section is intended to illuminate an area that is exposed after the development of the idea of $\mathbb{D}$. As we have seen in the representation of $\mathbb{D}$, when it came to being able to include all numbers in the circumference it was sufficient for us to put them in the subset to which they belonged, "Number". Behind this method lies a revealing idea about mathematics. Just as we have seen develop through words, how everything is in the end a universal equivalence through definition, being numbers also definitions, so it is with them. Numbers harbor a special meaning since they are inherently related to mathematics and mathematics predominantly uses logic as a language, which we unpack in this paper to explain that it falls under a larger term which would be metalogic (about which we have spoken indirectly in previous sections and with which we will deal in the next section with greater attention). This is the reason why we give a section of our own to numbers.

Leaving aside the definitional aspect of numbers, we want to investigate their universal equality among them through another way. This other way is the environment in which we use them, mathematics, in order to see, as announced in the previous paragraph, the intimate relationship of mathematics with logic and this in turn with metalogic.

We coin under the name of "Bridge" any way or form by which we are transported from a logical scenario to its developed metalogical state. For example, developing the formulation of the word has been a bridge to discover the metalogical reality behind it.

5.1 Number representation

The first bridge we will use to see the universal equality that lies behind the numbers will be their representation.
Throughout history, the Cartesian coordinate axis has been unanimously chosen to represent numbers, the reason being its immediate parallelism with space as we perceive it. However, it is only one form of representa-

tion of many others from which we could choose. After all, it is simply a pictorial way of representing relationships between numbers.

We now propose another configuration of the coordinate axis on $\mathbb{R}^2$, a circumference. We choose an origin on it and another point representing ∞, separating it into two symmetric halves as shown in IMAGE 16. In turn, for $\mathbb{R}^3$ it can be divided into 3, etc.

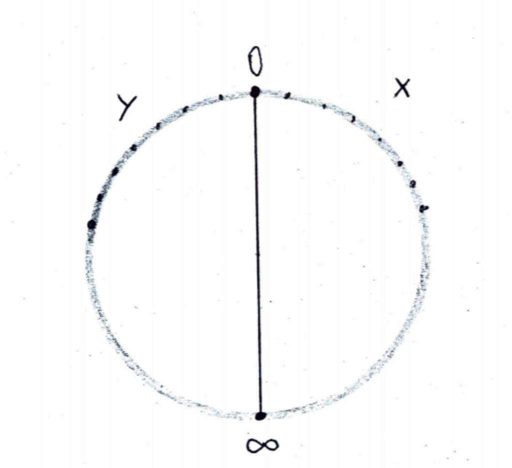


Figure 16: Circular coordinate map. x on the right semicircle and y on the left.

On each side we place the usual variables x and y for $\mathbb{R}^2$. The first question one may have in this respect is about the dimension of such a circumference, since it seems clearly finite. The solution lies in the fact that this circumference grows as needed. If we establish a distance d between the points, this distance either decreases as we include more points or remains the same as we enlarge the size of the circumference, or a combination of both is also bearable (however we will see that this aspect is not relevant).

To represent functions we follow the same methodology as always, that is to say, the points of the function are those of the intersection between the two straight lines normal to the points that we are dealing with in the coordinates. So if, for example, we take the function $y = 2x$, for the points in x of 1, 2 and 3, on the Cartesian axis we would obtain the IMAGE 17, while on our circular axis we would obtain the IMAGE 18.

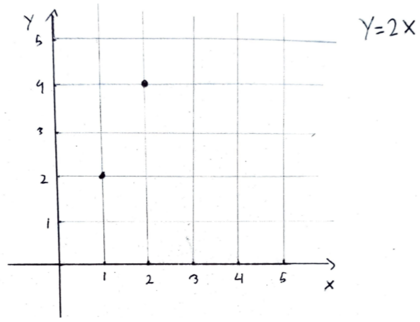


Figure 17: Cartesian coordinates map representing the points for $y = 2x$.

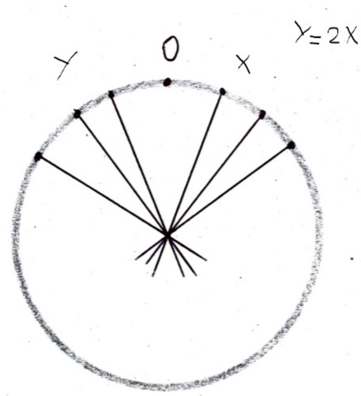


Figure 18: Representation of $y = 2x$ on the circular coordinate map.

As we can see in IMAGE 18, what we obtain, unlike IMAGE 17, is that the points of intersection of the function fall in the same place. Then we can establish that it is like this for any function, because the normal line to each point of a circle intersects with its counterparts only in the center of the circle. That is, on the circular axis any function is indistinct from any other, because all points intersect at the same value.

This type of representation would be of little use in the logical world, since it lacks the uniqueness of the elements that provide information, however, it is totally and completely valid outside the logical world. It is one more type of representation and from it the numerical metalogical aspect is inferred, where each value of a function f on $\mathbb{R}^n$ represents different values, and they all end up being actually the same on this circular axis. This is not meant to cancel the Cartesian axis or the logical world, for that is not the aim of this paper, but it is meant to imply that the logical world is just a subset of something larger, which is the metalogical world. The possibility of the circular axis is intended to remind us that this universal equality also exists, and what is more, it alludes to a set in which logic and its Cartesian axes are only a subset.

Repeated again as a corollary, both logic and its mathematics, which protect the Cartesian axis that here represents them, are not annulled and banished by metalogic, which is here represented by the circular axis. Logic and mathematics are valid if we restrict ourselves only to them, only to the subset they form. And this is something we do persistently, for as we shall see in the last section, the human being is accustomed to this kind of satisfaction and mentality.

What is true is that the validity of the circular axis, and of the metalogic it represents, reveals that logic is not the prevailing truth in the universe (perhaps it is in the human universe, as we have just pointed out in the previous paragraph), and that this metalogic is the greater whole in which every universal structure is contained, and of course, logic and its mathematics is one of them.
So we live comfortably and practical in the subset of logic and mathematics, but the whole is metalogical, it is the set in which our subset lives.

5.2 The undefinition

Of all the mathematical characteristics of numbers, the undefinition is perhaps the most relevant and the most graphic as a bridge to metanumbers. The mere fact that a situation is called "undefined" attracts upon itself many of the elements we have discussed in this text. We know that "undefined" is a definition, inevitably, as already explained, so all those undefined situations in mathematics have their place in $\mathbb{D}$, and by this way we intend to create a bridge to the metanumbers.

First we will create a situation of undefinition in order to see how it is constructed, and once we have reached it we will deal with it directly. The situation we will create comes again through the circumference. We know that the circumference can be understood as the limit at infinity of the number of sides of a regular polygon, that is, the limit that is inferred from IMAGE 19.

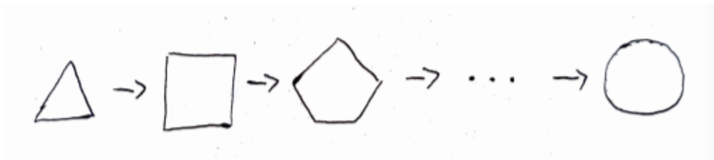


Figure 19: A sequence of geometric figures in which a side is added.

We first establish that the perimeter of the geometric figure is a constant and has value L. The value of the length from the center of the figure to its vertices, which we identify as the radius, we call x, and the angle between these radii we call θ. If we divide θ by 2 we obtain a right triangle with sides $A = x$, B and C. We describe this scenario mathematically by taking the first figure of the triangle:

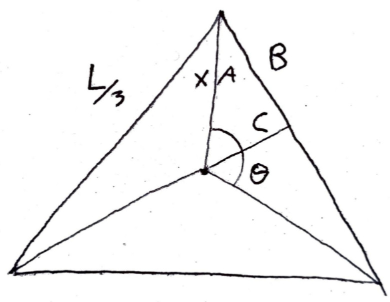


Figure 20: Diagram for triangle.

From here we get $x = A$, $B = (L/3)/2$ and $C = x\cos((2\pi/3)/2)$. If we advance in the sequence by adding a side, we find the square in IMAGE 21:

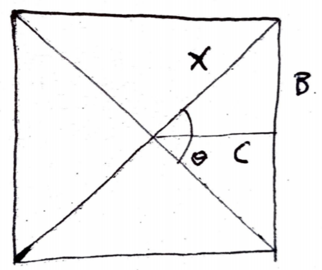


Figure 21: Diagram for the square.

Here we can see that the sides result in $x = A$, $B = (L/4)/2$ y $C = x\cos((2\pi/4)/2)$, so we can establish that the Pythagorean theorem depending on the number of sides n is the following:

$$x^2 = (L/2n)^2 + (x\cos(\pi/n))^2. \tag{11}$$

We rearrange the formula in such a way that we simplify the equality of x:

$$x^2 - (x \cos(\pi/n))^2 = (L/2n)^2 = x^2 \sin^2(\pi/n), \tag{12}$$

so we obtain:

$$x = \frac{(L/2n)}{\sin(\pi/n)}. \tag{13}$$

Now we take the limit when n tends to infinity, that is, when we reach the circumference:

$$\lim_{n\to\infty} x = \lim_{n\to\infty} \frac{(L/2n)}{\sin(\pi/n)} = \frac{0}{0}. \tag{14}$$

This is the result, a classical zero over zero undefinition from which we know that x should be equal to a number $r \in \mathbb{R}^+$ which should be the radius corresponding to the circumference that is formed by $L = 2\pi r$, so the zero over zero undefinition is equivalent to any positive real number, $\frac{0}{0} = r$.

We manipulate the equation again and apply the properties of limits:

$$\lim_{n\to\infty} \frac{L}{2n \sin(\pi/n)} = \lim_{n\to\infty} \frac{L}{2n} \cdot \lim_{n\to\infty} \frac{1}{\sin(\pi/n)} = 0 \cdot \infty, \tag{15}$$

in such a way that we obtain the trinity $0 \cdot \infty = \frac{0}{0} = r$. Of course, mathematics has developed tools such that we can ignore these results that we do not understand in our logical subset and get ones that we can work with, in this case applying both Taylor's series for the sine and l'Hôpital's rule respectively, remembering that $L = 2\pi r$ when $n \to \infty$, we obtain:

$$\lim_{n\to\infty} \frac{L}{2n \cdot (\pi(\frac{1}{n} - \frac{1}{3!n^3} + ...))} = \frac{2\pi r}{2\pi} = r, \tag{16}$$

$$\lim_{n\to\infty} \frac{2\pi r/2n}{\sin(\pi/n)} \overset{\text{l'Hopital}}{=} \lim_{n\to\infty} \frac{-\pi r n^{-2}}{-\pi n^{-2} \cos(\pi/n)} = r. \tag{17}$$

The latter result, as we have said, would be the one we would accept as valid. Not only does it produce the desired r, but it also avoids the cumbersome equality that presents an undefinition. However, this undefinition, which is well collected in $\mathbb{D}$, is the situation we are interested in. Both $\frac{0}{0}$ and $0 \cdot \infty$ are perfectly valid and existing results in $\mathbb{D}$, inescapably, and they also contain the property of being able to explain how the metallogic of $\mathbb{D}$ is expressed in the numbers. We recall that this metalogic that configures the structure of $\mathbb{D}$ is what is defended in this work as the logic inherent to any element. That is, everything is metalogic, which is what the set $\mathbb{D}$ represents, and human logic is a filtered subset in which our thinking has been barricaded in such a way that we can explain the world in a practical way according to our uses. In this subset we live, and for our sake we do not accept anything outside of it, for it would upset all this sense of practicality and efficiency that has brought us so far.

Since one of the objectives of this work is to be able to explain how the metalogic of the set $\mathbb{D}$ is organized or manifested, we proceed to investigate the obtained equality $0 \cdot \infty = \frac{0}{0} = r$. We first coin the term "Metanumber" to describe the mathematical numerical representation of $\mathbb{D}$. Metanumber is a definition of number, which shares every number and all of them with each other. Of course, this in turn equates them with the rest of the elements of $\mathbb{D}$.

A metanumber addresses to the conceptual behavior of a number. We call n the deficon of number, the metanumber, and we call $\mathbb{M}$ the set of metanumbers, everything that has the deficon of "number". Since n represents any number, we can establish the following relations:

$$n + n = n, n - n = n, n \cdot n = n, \frac{n}{n} = n. \tag{18}$$

These relations basically represent that any operation of a number with another number results in another number, this number can belong to any numerical set, be it the real ones, the complex ones, etc. We can draw a parallelism with the definitions, since the addition or subtraction between definitions results in a definition. A simple example is the definition of "Dog" which we could say "Domesticated canid", so that it is the sum of "Canid + domesticated" and if we subtract the second word we are left with only "Canid". That is, we always get a definition, of course immediately visible in the primary definition "Sum/subtraction of X and Y".

We now return to the result obtained earlier, $\frac{0}{0}$. We now assume that for this result there exists a solution m, i.e., $\frac{0}{0} = m$. We now perform different operations to see how it behaves:

$$x \cdot \frac{0}{0} = \frac{x \cdot 0}{0} = \frac{0}{0} = m \text{ for any } x \text{ in any numerical set,} \tag{19}$$

$$\frac{m}{m} = \frac{0/0}{0/0} = \frac{0 \cdot 0}{0 \cdot 0} = m \cdot m = \frac{0}{0} = m, \tag{20}$$

$$0 \cdot m = \frac{0 \cdot 0}{0} = m, \tag{21}$$

$$m - m = \frac{0}{0} - \frac{0}{0} = \frac{1 \cdot (0 - 0)}{0} = \frac{0}{0} = m, \tag{22}$$

$$m + m = \frac{0}{0} + \frac{0}{0} = \frac{1 \cdot (0 + 0)}{0} = \frac{0}{0} = m. \tag{23}$$

We summarize the resulting identities of m into a single one such that:

$$x \cdot m = \frac{m}{m} = m \cdot m = 0 \cdot m = m - m = m + m = m. \tag{24}$$

As we see, m has the same behavior as the metanumber, although every number is a metanumber, since every number has the deficon of n by obligation, we see that this result of m can represent the identity and property of n. For this reason we will use m as the bridge. If we recall the equality obtained above:

$$r = \frac{0}{0} = m = n \tag{25}$$

for r in all $\mathbb{R}^+$, we see that m can occupy any value r, so given this equality:

$$mx = my = m \tag{26}$$

for x, y in any numerical set by property (19), and since m equals r, we can continue the equality:

$$rx = ry \Rightarrow x = y \tag{27}$$

that is, any number is equal to any number[18]. This result is a direct relation of the total equality

$$r = \frac{0}{0} = m = n. \tag{28}$$

It is understandable that a priori it is somewhat difficult to understand associations, so we will try to summarize it narratively:
Any number by deficon is n, and for this reason every number is equal to each other, because every number is n. This is an equality of the metalogic. To reach this equality we have used the bridge offered by the indefinition $\frac{0}{0}$, which we have seen that with a solution m, which acts as n (since whatever its value, m is inevitably n, like any other number), we can establish the relation.

This is the juncture in which we find ourselves, we obtain through a sequence of operations a series of equalities of which we only accept one, r, because it is the one that appeals to our logical subset with which we can understand and manipulate the world, the rest of the solutions we discard, because they are not in our subset:

We accept/Logic	We reject/Metalogic
$= r$	$= r = \frac{0}{0} = 0 \cdot \infty = m = n$

And this is the way in which metalogic manifests itself in mathematics, the way of understanding the belonging of mathematics to the set $\mathbb{D}$ through the metanumbers. We belong to the large set $\mathbb{D}$ where the equality $1 = 0 = \infty$ exists.

[18]By (26) we have that $x = y = 1$, that is, every number is equal to 1 and through 1 we can equal all of them.

6 Last section

6.1 Resumen Corolario

The content expressed throughout these pages contains nuances of understanding and expression that are perhaps key to facilitating its comprehension. This summary section proposes a joint review of the topics covered with the aim of including these nuances to give a more compact sense to the text.

The main idea of this work is to present the set $\mathbb{D}$, which is the set that contains the definitions[19]. The existence of this set poses different problems with the classical tradition of logic, and hence of mathematics, since the former is part of the structure of the latter, and in turn also clashes with set theory. This problem boils down to the fact that $\mathbb{D}$ accepts logical contradictions. Logic and mathematics have as a fundamental basis of their disciplines the rejection of contradictions and their pointing out as an unequivocal symptom that the contradictory statement must be impossible, erroneous or simply invalid. This contradiction is the same problem that $\mathbb{D}$ presents for the theory of sets, since Russell already spoke about the fact that the set of all sets is not a set, which led to change the meaning of set that existed until then given by Cantor.
If we stick to the classical definition of a set, we accept that $\mathbb{D}$ is not one, for ease. If we speak of it as such, it is for the same purpose that a language and a metalanguage are used to explain logic. We use the notion of set in order to explain $\mathbb{D}$. What $\mathbb{D}$ we can really understand it to be, is a meta-set[20].

[19]The choice of "definition" to build the theory of this work is a consequence of appealing to the first or fundamental essence of thinking and reasoning, we could have chosen similarly (and saving the distances and nuances that each example entails and that could derive in turning in certain aspects the wording of this work): "word", "concept", "symbol", "meaning", etc. Words that appeal to the same essentiality as "definition".

[20]Speaking of set in the classical sense is problematic if we intend to give an understanding of the meaning of metalogic. The elements of the logical world are

We are able to understand that everything has a definition, if only by the mere fact of having the primary definition (e.g. "Giraffe" = "Definition of giraffe"). Now, what do we call the totality or group of all definitions? We call such a group $\mathbb{D}$. However, when one contemplates that $\mathbb{D}$ is a set, for after all a set is a collection of elements, the problem jumps out. This problem, as we say, is the appearance of logical contradictions of the nature $a \neq a$. This is something that goes against the set approach, against logic and mathematics. But not of how we posit $\mathbb{D}$. $\mathbb{D}$ is simply the set of everything that has definition, no matter if this definition is erroneous, incoherent, contradictory or invalid for logic. This is what prompts us to propose or suggest an apparatus such as metalogic. If logic is the apparatus that determines the veracity (validity) or falsity of propositions, metalogic is the apparatus that records the existence of such propositions. In other words, metalogic is the apparatus that accepts propositions (validity) if they exist.

This new scenario offered by metalogic is the scenario that has been rejected every time it has been glimpsed, as an example, perhaps one of the first, one of the theorems of John Duns Scotus (by other sources attributed to a Pseudo-Scotus) that affirms that from a proposition that implies a contradiction, any proposition can be deduced afterwards. Or we can also contemplate the concepts of consistency and completeness in logic and which Gödel used to present his theorems. The scenario presented by metalogic has always been traditionally and academically rejected.

And here lies the key, that it is rejected does not mean that it does not

certainly part of the metalogical world. The metalogical world is that which is in the logical world and in the complement of this, the valid, false and/or inconclusive logical propositions and logical contradictions, i.e. everything. For this reason we could contemplate logic as a subset of metalogic. But if we apply the classical sense of set it would cause some friction in some readers. It is $\mathbb{D}$ moreover, as we have said and will repeat in the following lines, a set that ends up being a single element, everything and itself is a single element, and is $\mathbb{D}$ itself. The metalogic and $\mathbb{D}$ express this character of universal unity and the logic is its separation, distinction and differentiation from this unique element $\mathbb{D}$, the definition. Since we understand that metalogic is then prior to logic, we can understand it as the meta-set or pre-set of logic.

exist. Metalogic, as a concept, as we have already presented it, exists, inevitably. And it is precisely this inevitability to which we refer. Concepts and definitions exist, inevitably, what their totality means is what we are here suggesting.

Any idea, theorem, mental structure that is presented to us (mathematics, logic, philosophy, etc.) not only uses definitions in order to explain what they consist of, but they are definitions themselves. $\mathbb{D}$ is the set of all definitions. We see that the problems of logic, i.e. contradictions, are accepted in $\mathbb{D}$, for as we have seen, an element a that has by definition not to be equal to itself ($a \neq a$) is a definition. This aspect is also key to understanding the scope of $\mathbb{D}$ and the metalogic, since we are seeing that contradictions do not cancel a system. We saw earlier in the section on "Characteristics of the set $\mathbb{D}$" that those definitions that have by definition "not being in $\mathbb{D}$" (which represents an essential problem for the statutes of logic) were reduced to representing the first contradiction $a \neq a$, and this being a definition, it has its place in $\mathbb{D}$. This is the essential difference with logic. In metalogic, here represented by $\mathbb{D}$, contradictions do not pose a problem. Moreover, if by problem we mean a factor or situation that nullifies or invalidates the system, we see that $\mathbb{D}$ lacks them. It certainly presents problems if one tries to explain it within logic, but not within itself.

The relation between metalogic (every proposition is valid if it exists) and the set $\mathbb{D}$ (everything with definition is an element of $\mathbb{D}$) is intimate and establishes a parallelism. One is a representation of the other posed in other terms. Both have the character of leaving nothing out, of collecting everything or recording existence. The metalogic is a way of thinking or a mental structure and the set $\mathbb{D}$ is a way of being represented.

It is because of all that has been explained that metalogic is presented as the great mental set in which all the others are gathered. If we classify all ideas or propositions through the filter of logic, that is, into valid or invalid, or we can even go further and introduce a third category that could be "inconclusive", all of them are elements of metalogic. If we organize propositions into sets (systems of thought) that validate them (not only logic, but any other we want to construct)[21], the set that contains all these propositions is metalogic. It is therefore the metalogic the great all-encompassing set.

Another aspect to consider regarding $\mathbb{D}$ is the ultimate unit it represents. We understand that every word is a definition, so that all words are equal to each other because they are all equivalent to definition. This perspective, which thus expressed a priori is not so conclusive, is the one we have shown in the section "Formulation of a word". What we normally understand by definition of a word is what we coin here as deficon, of "communicative definition". It is the quick and practical way to make each other understand the meaning of a word. As we have seen, the deficon, which is a finite and usually not very extensive number of words, hides or masks the fact that each word that composes it is in turn a deficon (and so on ad infinitum). We have expressed this reality in the form of a sum and have extensively induced that each definition is the result of a limit of words taken towards infinity, so that the definition of a word harbors the totality of words. We have used the example of Wikipedia entries to expose the idea. A Wikipedia entry is an unusually long deficon, since the length of a deficon is a completely social thing. Each entry in turn contains other entries. The total count of entries contained initially (those appearing in the same entry) and

[21] Any system that is divided into accepting or rejecting elements on the basis of their validity. For example, Chomsky's sentence "Colorless green ideas sleep furiously" in linguistics is used as an example of a grammatically correct but semantically incorrect (invalid) sentence, in metalogic this sentence is valid in all aspects since it is a proposition, it is a definition element of $\mathbb{D}$. As we have already pointed out throughout this paper, a definition is anything defined, whether it makes sense in the logical world or not. "A square circle", to use another example, has no meaning in the logical world, we are not able to make sense of this concept with the typical definitions (we repeat that through the analysis of the limits of the definitions, "a square circle" contains the total of the definitions, just like any other definition and this leads us to a situation of global equality between all definitions). "A square circle" exists in $\mathbb{D}$, since it is a definition (erroneous or not in the logical world). Validity in metalogic, we repeat, is existence. It is the universal and primary set.

subsequently (those appearing in post-entries) in a single entry reaches the total number of entries. This last statement does not depend on research done to prove it, but is based on the fact that the length of an entry is as long as one wishes. Potentially any entry comprises the rest, it is just a matter of wording.
However, knowing that a possible reluctance to accept this may come from thinking that if there are isolated, completely unrelated words (again, it would not have to be so as we have said, it is all a potential question of wording) then the phenomenon we are talking about would not occur. To address this claim what we have done is to take the inverse limit. The minimum definition of any word is "word", to which we can then add whatever we want to to give it its meaning. For this reason, any definition is equivalent to the whole. If we use an extensive description of a definition, we find the set of all definitions, so each word is equal to the set so they are equal to each other. If we use the minimal description, we find that all words are equivalent to each other because they are all equivalent to "word"[22].
Then we have that every word contains the set of all of them, and therefore all words are the same. The set $\mathbb{D}$ is the representation of such an idea, this set is the "definition". It is really just one, "definition". But from logic we contemplate $\mathbb{D}$ as a set of distinct elements, of different definitions. The metalogical reality of $\mathbb{D}$ is that there is only one definition, $\mathbb{D}$ itself. Reflections on this aspect we find in the following section "An Eleatic Perspective".
From the previous lines we can glimpse another dichotomy between logic and metalogic. In the logical world we assign an individual and separate value to each word, in the metalogical world all words are the same. The filter for establishing and accepting differences between one and the other is a logical quality. Why do we assign the quality of differentiation to the logical world and the opposite to the metalogical world? In the logical world differences are established (valid or invalid) and in the metalogical world they are not (it is valid if it exists). This difference in mental structure is represented in understanding all definitions as different or as the same.

[22] We use here indistinctly "word" and "definition".

Metalogic and $\mathbb{D}$ are the large sets[23] in which we find ourselves, the large set of everything. Humans, by tradition and habit have always clung to logic and have ignored anything outside its margins[24]. However, when we operate in logic, there are times when we see ways that lead us to metalogic and we immediately reject them. These paths are tools for moving from the logical world to the metalogical world, for representing the metalogic from the logic, we have designated them "bridges". Apart from the bridge that we have taught through the extensive and minimal analysis of the deficons, we have taught another well known one in mathematics, and that bridge is the undefinition. When we are confronted with it, we immediately ignore or reject it and consider everything that is consequent to it as invalid. The bridge to metalogic from logic is always present, one way to demonstrate it following the undefinition of mathematics is to understand that x/x is always attached to any mathematical element, whether it is a constant, a function, etc. This fraction represents the unit, and every mathematical element can be understood as itself multiplied by the unit. Now, x/x takes the form $0/0$ when its limit tends towards 0. From the form $0/0$ we obtain an undefinition that has as a consequence the approach that we offer in this work in the section on the metanumbers. As with the definitions of words, the limits ad infinitum in the sums of the definitions exist, they are present, it is a potential reality, but we do not make use of these limits nor do we consider them at any time in our day to day life. In order to communicate efficiently we ignore that reality and we limit ourselves to our deficons. That is to say, the path to metalogic is always present even if it is in this silent form and when it becomes evident we reject it in order to continue operating within logic.

The reasons for sticking only to the logical world are obvious. Human beings have a learned predilection for pragmatism and logic is the

[23]Metasets or pre-sets if one prefers, we repeat. Let this appreciation be kept in mind whenever we come across the designation of set for metalogic and $\mathbb{D}$ in this work.

[24]In general and academically, but it is true that in artistic or philosophical areas there have been expressions close to metalogic.

foundation that supports it. In the logical world we have language, a basic tool together with mathematics (another language)[25] in order to make the world understandable among us and to be able to make an use out of the world. This paper does not intend to annul logic or abolish it, but simply to remark that it exists in a larger framework which is the metalogic, which is expressed in $\mathbb{D}$. How human pragmatism and the production and harnessing of the world would function or benefit from operating in a metalogical mode or in $\mathbb{D}$ is unknown to the author a priori. Further reflections on the human aspect of the logical world are found in the section "Satisfaction and the Logical World".

6.2 Eleatic perspective

In the previous section we have made a discursive summary of the main ideas exposed in the paper. We have seen that definitions form a set which we have called $\mathbb{D}$, and that such a set comprises the totality of things. Anything is definable, whether by its primary definition or not, whether it is "something we can think of" or "something unthinkable," every element of existence has this essential and basic characteristic.
The set $\mathbb{D}$ also exposes that not only everything is a definition, but it is the same, but in our logical world we separate and make distinctions of that fundamental essence in order to be able to understand and act. The fact that every element is a definition and that every definition is the same appeals to a universal unity to which reference has been made throughout history in different philosophical currents and which we will discuss below.

Initially, the vision that we point out of everything as a definition being a universal unity corresponds to the vision of the school of Elea and that gives name to the current taken by Parmenides. For Parmenides the real was one and immutable, what $\mathbb{D}$ suggests, from the metalogical plane,

[25]Definitions (language) and numbers (mathematics) are entities in which we make separations and differences, each word and number has a determined and different value in the logical world, not so in the metalogical world where they have the same value: definition/number.

is that everything is one, since everything is equal to definition, and every definition is equal to another, so that everything is a single definition.

Similarly, the first of the philosophers, Thales of Miletus, proposes that water is the primordial matter of the cosmos, the arche of the universe, and everything is water in the first or last instance. This agrees in an essential way with $\mathbb{D}$. We say that any definition is equal to any other, so that we can choose any definition to point to as the primordial one[26] and to which all others are equal. Be it water or be it any other. We can relate any word to any other word, for any word P_m^n is contained within the sum total of another word P_l^k[27]. The strategy of establishing such a relationship between two words lies in reordering and handling the words at one's whim in the definitions of P_m^n and P_l^k.

In the Pythagorean current the monad is considered as the totality of things, the first entity from which all others come. This vision in its own way corresponds to what we say here, since we say that the primary plane is the metalogical one, that of unitary existence in a definition, which we then divide into words through logical thought.

Heraclitus thought of fire as the arche and also proposed the universe as a constant change propelled by the imbalances between opposites. We can understand how in logic the differentiation of the metalogical

[26] A distinction proper to the logical world, since giving values to differentiate and classify is an intrinsic property of that world.

[27] For $k \neq n$, $l \neq m$. Let this note also serve as a reminder that in this paper we explain metalogic through logic. The use of different indices, different words, etc., is inevitably a logical method to which we are forced to resort in order to explain the idea of metalogic. In the same way that in logic a language and a metalanguage are used in order to be able to speak of logic. We also recall that the logical use of definitions as separate elements to afterwards demonstrate their equivalence by applying existing but hidden limits is something we have called bridge. The use of logic to be able to explain metalogic is an indispensable condition, for the author does not understand how one could humanly make the reader understand the idea by treating absolutely all words as equal and replaceable among themselves. More reflections on this aspect can be found in the last section "Disconcert".

concept of definition results in different words, of which many involve opposites in definition and action. This struggle evident in logic is invisible in metalogic.

The atomism of Democritus and Leucippus likewise refers to a primary indivisible character of reality. Although this was oriented more to a logical aspect of the physical world[28].

Spinoza contemplates nature as if it were God, so that if everything is nature, everything must be God. We live then in a natural world from which we make distinctions, however, everything to which we give a denomination is nothing but God.

In Schopenhauer's philosophy, noumenal reality does not consist of different things but of only one, unlike the phenomenal world in which the different components of existence are presented to us as individual components. From these lines we can deduce a clear parallelism with the logical and metalogical world.

With respect to Schopenhauer's philosophy, of clear Kantian influence, it is interesting to point out that the Kantian distinction between analytic arguments (in the proposition the predicate is contained in the subject) and synthetic arguments (in the proposition the predicate is not contained in the subject) does not exist in metalogic since every argument must be analytic, since a word contains the rest[29].

A philosophy close to the above is also that of Francis Herbert Bradley, who proposes that reality is one and that its ultimate truth transcends

[28] One could consider the atomic theory could be considered as a bridge, since it exposes that behind all matter (different and differentiated objects) there is the same primary principle, the blocks that compose the different objects are the same and indistinguishable.

[29] It is important to point out again that all these paragraphs are expressed in order to achieve a logical comprehension in our logical world. For in metalogic, in the metalogical world, to say that arguments in metalogic are only analytic is as true as to say that they are all synthetic.

all thought and logical categories. He argues that the impression we have of reality consists of a multiplicity of related objects as a result of the separations imposed by thought.

Ferdinand de Saussure presents language as a system of signs and adds that no word is isolated. In this work it is argued the inevitability of every element as language, as definition, and makes use of the maximum and minimum limits to demonstrate the non-isolation of words.

Wittgenstein exposes in his work that the meaning of a word is lacking in essence (in the philosophical essentialist sense) and boundaries, so it is a network of similar meanings that overlap. Although the conclusion of the superposition of meanings for a word is directly related to the maximum sum hidden in the definitions (since we can relate or superimpose definitions as we wish by rearranging the elements that compose it as we have pointed out in previous lines), the premise that states that words are lacking in essence (which means that they do not have a common property) would not be true in what is proposed in this work, since any word or designation has the minimum (and/or primary) property of being a word (definition).

To conclude this series of mentions of philosophical works in relation to this paper, we take Derrida's phrase "There is nothing outside the text". Apart from the meaning given to it in Derrida's original work, here the meaning taken from it is:
1) Those words that appear in a text contain the total of them (outside and inside).
2) All those words in the text are equivalent to a single definition. That text is a single definition. There is nothing outside a definition (as we have explained, there is nothing outside $\mathbb{D}$).

The works mentioned here are not an exclusive and definitive list, but are simply a range of some selected philosophies. We take it for granted that we have left out, through imprudence or ignorance, other great works that deal or have a direct relation with the idea presented in this

work.
However, we would like to point out that the ability to relate the idea behind $\mathbb{D}$ and metalogic to a philosophical work or any idea is unlimited. The ability itself obeys to metalogic. We are able to relate any idea to any other idea by the fact that the words and phrases that are present in the description of one idea are also in that of any other, because both have the sum total of words in their definitions. The ability to rearrange the total words in the definition and make it sound more satisfactory[30] depends on one's own discursive ability. We can relate any word to any word thanks to the fact that both contain the same number of words (the totality) in their definitions. We can relate "chimney" to "whale", it is possible, we just have to rearrange and select the words of their definitions in the way we are able to, the potential for relationship is there and it is up to us to establish it. So it is with ideas and philosophies. Since an idea requires words to be explained, we can establish relationships with any other idea through the very words used to explain them.
We must also add another fundamental and immediate aspect about ideas. Since every idea is a definition (since everything is a definition), any idea is equal to any idea, because both are definitions and are equal to any definition. That is, any idea is equivalent to any other idea. Every idea is the same[31].

[30]We will go over this aspect with greater detail in the following subsection.

[31]We repeat once again that in metalogic "all ideas are different" and "all ideas are the same" are equally valid ideas. Both have the value "idea"/"definition" and in metalogic equality is established through this primary value. Every idea has the value of idea, and since they have the same value they are indistinguishable. We see precisely then, that this quality of equality through having the same value is what makes it possible for us to say that all ideas are the same in metalogic without having to invalidate "all ideas are different". We can understand the mechanism of metalogic as the system that always says yes to any proposition, validating it. If the proposition is a contradiction that goes against the metalogic, for example "Metalogic always says no to any proposition", the metalogic says yes to this proposition, it says it is true, and the system has not collapsed, because the system is still standing, it continues to say yes. "Metalogic says no to this proposition" is a proposition to which the metalogic says yes. And there is no contradiction in it or the system has been spoiled, which is what a

From metalogic we have that there is an indissoluble unity of every thinkable element, of every definite element, and from logic what we have done is to take this unique universal concept and divide it into different pieces, each piece being given a form and each form a meaning that gives it its own independence from the rest. They exist by themselves. But every piece has exactly the same essence, it is the same matter. Metalogic is fixed in the matter, logic is fixed in the form it has given to it[32].

For this reason we appeal to the definition as the arche, the monad of the universe, for it is that which forms everything and furthermore the universe itself is but a single definition in turn. This is the eleatic perspective.

So that God or a being who lives and understands only metalogic, who sees everything as a single substance, if it were possible for him to see us discuss any matter, which directly or indirectly boils down to questions of language, if he could, what he would want to tell us is:

"What the hell are words?"

There is another important aspect related to $\mathbb{D}$ derived from the universalistic terms we have presented. Let us say that the human being aspires to know "the truth", that is, a kind of knowledge that contains a revealing proposition that completely explains everything, the ultimate truth.[33]. This proposition, which would be a sentence or a formula,

contradiction really means when it appears to us in a logical system (here we see the difference). Someone cannot come along and object *Metalogic has a contradiction because it has said yes to a proposition to which by saying yes it is saying no*, for the question that follows is: Has the metalogic said yes? Yes. Then there is no contradiction, since the system, the metalogic, is simply based on saying yes and it has done so. Logical contradiction is not something that neither concerns nor affects it. The metalogic inevitably accepts everything, including apparent logical contradictions, which are not a problem.

[32] This analogy is intended to be understood from logic, as everything, since in metalogic both matter and form are equal.

[33] It is understandable to think that the ultimate substance of the universe is something for us unknowable, alien to all cognitive experience, but for us it must

for example, has to be represented on a circle of $\mathbb{D}$, as in IMAGE 6. Each word of that proposition draws a line with the following one in the order in which that sentence is expressed. That is, there is a drawing that obeys the ultimate truth. However, the position of the words on the circumference is somewhat arbitrary, so the drawing that represents the ultimate truth is arbitrary. Any drawing can be the ultimate truth. That is, there is no ultimate figure, no ultimate drawing, no divine form that represents the ultimate truth for humans within logic, within the world where words exist separately. However, there is a world where the ultimate truth has a fixed drawing and it must always be the same. We know from the section on "Representation of $\mathbb{D}$" that the result expresses that every word is equivalent to each other, that every word is any word, that everything can be reduced to a point, a single definition. This would be the definitive drawing of the ultimate truth, a point.[34].
This takes on special significance if we think of knowledge in the following way. If the ultimate truth, that proposition that explains everything completely, depends on the knowledge that we acquire throughout history, that is, the more we discover and invent as time goes by, the closer we come to being able to reveal that ultimate truth, then it could well be that we will never reach it. We would of course have to investigate what kind of function we are in front of, and depending on it, we would know if we will ever be satisfied with knowledge, or if on the contrary we are destined to always search. This dilemma is nonexistent in metalogic as we have posed it in the previous lines, since we already have that ultimate truth, it is a definition.
It is also interesting to note that in the history of philosophy or metaphysics, if we have Parmenides as the beginning, we have already discovered the end, since truth was the eleatic. This is only a merely romantic note, but it points to something more significant. Throughout history

inevitably be a definition, for we can only think and explain the world with them.

[34]In reality, any form or drawing would be in metalogic valid to represent any truth, because they are all equally valid. However, knowing that any drawing can be reduced and is equivalent to a point, we prefer to opt for this vision because it provides maximum simplicity.

we have done nothing more than remodel the original idea in order to discover new forms and new uses in philosophy and knowledge. And we depend on reshaping, deforming, splitting and dividing the universal definition in order to be able to continue advancing in the logical world, in the practical human world. We are destined to always think the same idea in order to express it in different ways.

6.3 Satisfaction adn logical world

Throughout this work we have exposed different situations to express metalogic in comparison with logic. We have established the difference and the relationship between them. Now we ask ourselves, what is logic really, why does it exist and why do we go by it?

Yes, we are governed by logic. Logic is that mental apparatus that consists of filtering propositions, ideas, in such a way that we can validate or invalidate them according to their character of truth. It seems, then, that if we want to know why we function with logic we must first understand what we call truth. However, it can be argued cyclically that we call truth that which we validate in logic.

In this subsection what we propose is a different vision of what we call truth and of the logical structure that protects it. There is a scenario prior to truth and logic. This scenario is a mental or psychological plane. In this scenario a factor comes into play that we will here call satisfaction. It is this factor that directs and orchestrates the mental or psychological scenario that ultimately gives rise to calling something true or logical.

How does this satisfaction act then? When we affirm that something is true or logical there is first a mental operation that is carried out. This mental operation consists in fulfilling the mental requirements we have to call something true. The fulfillment of these requirements is what we call satisfaction.

If we call something true it is because we have satisfied the needs that this adjective demands of us. When we understand something as true, there is previously a feeling that mentally authorizes us to do so. The adjective "true" has a series of mental components that only when all of them are satisfied can the mind authorize the use of that adjective.

We could in turn argue that this is true of any other adjective, such as "yellow", for example. In order to be able to say that something is yellow we will have to have previously satisfied the mental requirements we are asked to call something yellow. However, the adjective "true" is prior to any other adjective. For us to call something yellow we must first have satisfied ourselves that it is true that it is yellow. For this reason the focus falls on the satisfaction of true.

We recognize then that the role played by satisfaction is essential in logic. It is satisfaction that is the initial filter whose further development derives in logic. Satisfaction is logic in the first instance.

Satisfaction can also be understood as conviction.[35]. It is a feeling that really appeals to a psychological plane as we have pointed out. The feeling of being convinced that the adjective "true" is applicable, being satisfied with the use of the adjective "true" in the situation in which it is being used.

Satisfaction, as we have said, plays a fundamental role in recognizing something as true. This feeling can in turn be managed using different tools. With this management we achieve that a priori "false" propositions or situations result in being accepted as "true" through the use of tools that facilitate the achievement of satisfaction.
To illustrate this idea, we will present practical cases. We take as an initial example the sentence "A whale is a chimney." This sentence for a great majority of readers turns out to be false, they are not satisfied with the assignment of the adjective "true" to that proposition. Now, if the reader has read the present work, and to the sentence "A whale

[35]"Satisfied" and "convinced" are two words often used synonymously.

is a chimney" we add an external explanation, for example, that whale and chimney are the same in the metalogical plane, because both are definitions, then it will be easier for him to say that the sentence is true. And not only using this explanation, but we can give other explanations to get closer to satisfaction. For example, we can say that "A whale is a chimney" because both have holes that they use to expel, one smoke and the other water, and it is precisely these holes that many people have in mind when they think of these two words, the holes are a pictorial description of both words. After this outside explanation, many people will say that the phrase is true, because they understand that it refers to something like a metaphor.
We now use another phrase, for example "One plus one equals hippopotamus". This sentence will also sound false to a large majority. If we again use the metalogic argument, the reader will soon become more comfortable using the adjective "true" to describe this sentence, since one and one are words, two is one word and hippo another, so that equivalence is satisfactory. Another outside explanation that can be used is to argue that "one" is an unspecified unit, so "one" can be anything[36], for example "half hippopotamus". In that case, many people will also be more comfortable using the adjective "true".

Once both cases have been developed, we can see which is the tool that allows us to achieve a higher degree of satisfaction in the assignment of "true". This tool is context. Depending on how we use and argue context, we will achieve a higher degree of satisfaction in the receiver of the sentence. The use of this tool refers to a fundamental aspect: we only accept as true that which is explained in the logical world. If we notice, contextualization is based on adding arguments that contain in themselves the adjective "true", and the sum of these true elements causes that which they contextualize to become true as well. The purely human aspect is manifested in the fact that getting the receiver to take as "true" a proposition that he has initially catalogued as "false" relies on the ability of the contextualizer to be able to outline the arguments. The contextualizer has to know the logic and have human skills to achieve

[36] Argument that reflects glimpses of metalogic.

this task, so that the better he is given these aspects, the better contextualizer he will be.
The degree of satisfaction to call something true depends on the accuracy with which arguments are added. Understanding the given context, the character of the definitions in action, is what makes us decide whether a sentence is true or not.

We can now make a connection with previous sections. Contextualizing, giving explanations besides the sentence or proposition, is an approach to metalogic. Through this tool, which is always present, since every sentence exists with context (or can be added to it), we are able to equate A with B. This refers to the potentiality that resides in the sentence, in the definitions it contains. This potentiality is precisely the bridge that we build across the limits in the sum in the section "Formulation of a word".
That is, calling something "true" depends on satisfaction, this satisfaction can be managed in such a way that a sentence that we initially judged as false ends up being as true as we previously judged it to be false.

This subsection aims to point out the human character that "truth" has, which depends on a satisfaction with the adjective "true", and which ends up appealing to metalogic as the great background in which it takes place.

When we contemplate mathematical knowledge, we see that it is built on a series of axioms. The reason for these axioms does not lie in further logical reasoning, does not depend on further axioms (except themselves in circular reasoning), but depends on satisfaction. We have established these axioms, which we cannot reason about, as the basis because they are the propositions that most easily satisfy us, the ones that do not need much argumentation for us to accept them as true. Moreover, they are the ones that need a minimum of argumentation to be accepted as true, the ones that are easiest to satisfy the adjective "true".
In this principle, in this beginning of truth and logic that axioms sup-

pose, we see that the components that form it are words, definitions. That is to say, at the dawn of logic, at its very beginning, there is the definition. All subsequent structures that arise from these axioms are also definitions. The existence of the definition is prefundamental to the beginning of truth and logic, because the axioms and the highest degree of satisfaction is formulated in its terms.

That is to say, there is a basic property which is the meaning, the conceptual understanding, this is a single entity and it is the maximum satisfaction, which we identify with the universal and unitary definition. Everything we choose as an axiom is the closest thing to that entity, it is the first treatment or manipulation of the definition. A very light one. As we advance in the treatment and manipulation of the definition we move away from the maximum satisfaction. In such a way that, as we have seen, when we have added context, i.e. more propositions, we see that our satisfaction increases, because we are "putting together" the different separations that we have made of the universal definition and in this way we get closer to it, and as we get closer to it, we get closer to the maximum satisfaction, so we gain in degree of satisfaction.

We can draw a certain parallel between the above and Descartes' basic rationalism. The first truth that an individual has is that she exists, and this manifestation is presented by the fact of thinking. The degree of satisfaction here is maximum because it is the initial one, it appeals to this primary conceptual understanding that we identify with the universal and unitary definition. All further thought starts from this and are divisions also of it, they are divisions of that notion of existence, and it is this notion with which $\mathbb{D}$ is identified.

We recapitulate and summarize:
We have the case that there are propositions that contain a great satisfaction, these we call axioms. These axioms are expressed in the form of definitions (inevitably), so the definition appeals to something prior and more fundamental than axioms and logic. Logic and hence mathematics depend on definitions, it is their prior plane.

The ultimate satisfaction, that which is completely " true" is the fact that "true" exists, that this satisfaction exists. From this notion comes any other notion, since we use " true " to be able to articulate propositions. The ultimate satisfaction falls on this notion of existence, this primary truth which is the fact of thinking. This primary truth is existence, the fact of being able to define, the act of defining, the definition, is our first truth, that of maximal satisfaction. As we manipulate the definition (in the form of creating different words) we move away from maximum satisfaction. When we add context to a proposition, that is, we add to it parts from which we had separated it after manipulating the definition (the primary truth, that initial act of defining), our degree of satisfaction increases, because we get closer to having the initial definition again (we add words in such a way that we are closer to returning to the initial definition, to the whole without having been manipulated, without having been reformed into different words) that represents the maximum satisfaction.[37].

6.4 Disconcert

This last section is a reflection on the human context in which we find ourselves and how it understands metalogic.

We have seen that in metalogic every word and every idea maintains an equivalence with each other because they are all the same. This poses a desolate scenario for the search for understanding in human terms. We live in a metalogical universe in which opposites are equal and in which there is no possible distinction between elements. What attitude should we adopt in the face of this scenario?

As we have pointed out in different sections, humans can only operate in logic. Does this mean that there is no way to operate in metalogic?

[37]Briefly: The definition is one and it is our maximum satisfaction, when we split and divide such unity, our satisfaction decreases, when we put those disunited parts of one back together, our satisfaction increases, for we are returning to the one, to the maximum satisfaction.

Operating in metalogic makes no logical sense within metalogic, since whatever is done or not done in metalogic is already recognized as operating, and as not operating. Here is the point. The way we humans understand the world and how we use that acquired knowledge to manage it requires to be able to have differentiated elements: truth from lie, one word from another. It is for this reason that we must ignore the presence of metalogic. Of metalogic, the only thing we should consider is that it exists, but not allow its existence to get in the way of our understanding and manipulation of the world.[38].

We understand that, given how the human mind works, pretending to live contemplating the metalogical world could only lead to disconcert, a state of profuse alienation based on a confused indeterminacy. In contrast to the concert generated by the logical world, in which we can store knowledge and thoughts with a certain ease and diligence.

For these reasons we advocate shying away from the disconcert that establishing oneself in the metalogical world generates and we advocate remaining in the logical world. Of the metalogical world we only recognize its existence, we understand that it is a previous and primary plane in which everything is gathered and we also understand that all our human logical world (its words, propositions, ideas, etc.) are contained in it, but we do not allow it to disrupt the concert with which we understand and express ideas, which is the basis of our existence and functioning.

One could argue that ignoring the metalogical world is akin to closing one's eyes to an uncomfortable truth. This argument is fully valid, for that is precisely what we are doing. As we have said, we acknowledge its existence, we do not deny it, but we must ignore it for our own good.

[38]The author must admit that the possibility of using metalogic arouses his curiosity, since he does not understand how this could be done and in what terms. From the position we have decided to take of ignoring the metalogic, we recognize in turn that this is an a priori and not a sententious judgment.

We have traveled a journey of dozens of pages recounting different issues to present an idea that we finally ask to be recognized to be ignored. But perhaps not forever. As we have pointed out, it may be that acknowledging the existence of metalogic will one day result in an unexpected use of it. For example, it may well be that a direct bridge from logic to metalogic, such as the undefinition of a zero in the denominator, which is a continuous presence in every mathematical operation and element as we have pointed out, could be exploited through the use of metanumbers in order to clarify unresolved situations.

As we see, the benefit we can expect from metalogic is inevitably stated in human terms. We understand knowledge as a finality, something ready to be applied or related to. Perhaps metalogic serves us more as existence, perhaps just recognizing its inescapable presence in which we find ourselves is its purpose.

On this last aspect we would like to add something else. The absolute reality in which we find ourselves is metalogical, but we operate in logic, and this applies to the universe. The universe is contained in metalogic and we appreciate it logically. We are able to differentiate a tree from an ocean and give them different meanings. If we are asked to make the drawing on the circumference of $\mathbb{D}$ of both, we will see that they project different drawings. However, we repeat that these drawings are arbitrary and that for that very reason, according to an outside view and configuration, both drawings can be the same. There is no fixed figure, no objective and immutable truth in the face of any change of position. We perceive the words, that which contains the universe, as drawings in which each one has a uniqueness, because we decide to apply a convention to the configuration of the order of the elements of the circumference. The basis of our understanding is to respect that conventional configuration that we have "agreed", it could be said that this is logic. To respect the uniqueness of the drawings based on the agreed configuration.
When we argue for small changes in that configuration, either by reorganizing words based on new theories or discoveries or for any other

reason, is when philosophical, ideological, and all kinds of debates arise, opinions included, of course. These debates revolve around the difference between drawings for the same word that is being debated, starting from different configurations, or the same but perhaps their way of defining the word is another drawing.
This is our way of understanding the world. The world is that circumference of $\mathbb{D}$ and we understand and use it through this differentiation of its elements, agreed configurations and unique drawings. But that configuration of the circumference, as we have already said, is arbitrary, and ultimately we appreciate that any word can be any other word, and that circumference can be represented as a point, a single element.
When we give that circumference the vision of a unique and agreed configuration, we obtain the concert, as we allow more reconfiguration and arbitrariness we obtain disconcert, being the final limit of the disconcert the representation of the circumference as a point.

The latter seems to allude to the passage from logical to metalogical as a spectrum. We could understand the gradation of this spectrum through the number of words in a language, the more words (single and separate), the more logical the perception, and the fewer words, the more metalogical. Our way of being able to differentiate a tree from an ocean is justified by our senses, perhaps an intelligent being inhabiting another part of the universe, by his own senses will not be able to make this difference because his way of perceiving both objects is that of two quantum fields, which are theoretically equivalent in the numerical translation on which his language is based.
The disconcert for us is generated when different words, different ideas, opposite concepts turn out to be equivalent[39] since it breaks with our mental scheme of world conception. But in other conceptions of the

[39]When we speak of disconcert we speak of the inability to communicate or think, since all the words that make up thought and communication are completely interchangeable. We are not talking about the disconcert generated by the confusion (a general term for disconcert and not the one we have coined here) produced by discovering something we did not know or did not suspect about a particular word.

world, this equivalence between contrary ideas, which generates contradictions in our world, exists and forms part of their language.
We suppose that we meet that intelligent being from another part of the galaxy who does not know a tree from an ocean. We suppose in turn that there are special glasses that allow us to perceive the world the way our galactic companion perceives it, and vice versa, the glasses allow him to perceive as we do. When we put them on we see that, indeed, under that perception an ocean and a tree are exactly the same. When our companion does so, he will be surprised to find how differently we appreciate it. Which language is correct: are a tree and an ocean indistinguishable, or are they not? It seems safe to say that both options are true, because it depends on perception. But if both are true there is a logical contradiction, for one (they are the same) is the opposite of the other (they are not the same). This contradiction in our logical world would generate a very interesting debate according to our intellectual tradition, but it distracts us from another aspect. Both perceptions are definitions. The perception of the galactic companion generates only one definition, our perception generates two. Even if that galactic companion perceived nothing, "nothing" would be its definition. This points to the fact that what is truly universal is the definition. The fact that both "a tree and an ocean are the same" and "a tree and an ocean are not the same" are both universally valid points to the metalogical context in which we are inevitably placed.

From the concert of logic we speak of the disconcert of metalogic. From logic we see that any idea is valid in metalogic, since the idea that "not all ideas are valid in metalogic" is also valid. This last idea, seen from logic, means that indeed all ideas are valid in metalogic, but we must remember that in metalogic, the value of "not all ideas are valid in metalogic" is true, just as "all ideas are valid in metalogic", there is no subsequent metalogical reflection that sentences that then all ideas are valid, that reflection belongs to logic. That which leads us to say that for this reason precisely all ideas are valid in metalogic is a deduction of ours, a logical affirmation. In metalogic this antagonism, this contradiction exists without any difficulty, without a deduction or affirmation that "saves" them. The disconcert that this would cause to a mind accustomed to logic such as ours is what we want to avoid.[40].

One more way to illustrate the scenario we are facing is the following. In logic we use truth and falsity values to filter propositions. Let's say we have the total number of propositions $P_1, P_2, P_3, ...$ We divide these propositions into true or false. We call $\mathbb{F}$ the set of false propositions and $\mathbb{V}$ the set of true ones. This is the main operational scheme of logic. Problems arise in this scheme when there exists a proposition P_n whose content is "$P_n \in \mathbb{F}$". If P_n is in $\mathbb{F}$, then P_n is in $\mathbb{V}$ because it is telling the truth, and vice versa. This then is the logical system we have and the problem we find in it. There are propositions that are undecidable and to which it does not matter what value we assign them, because they result in contradictions. These contradictions are the problem, because they point to an annulment of the scheme. What happens in metalogic? We have the set $\mathbb{D}$, this set is the set of propositions. For a proposition P_n whose content is "$P_n \notin \mathbb{D}$", i.e. "P_n is not a proposition", nothing happens. P_n remains a proposition. In logic we will say that P_n is false, because P_n is a proposition. In metalogic both "$P_n \in \mathbb{D}$" and "$P_n \notin \mathbb{D}$" coexist smoothly. The propositions live in $\mathbb{V}$ or $\mathbb{F}$ in logic, but in metalogic they live in $\mathbb{D}$, in logic their validity is determined by which group of the two they belong to, in metalogic their validity simply resides in being in $\mathbb{D}$.
Logic is the concert with some out-of-tune instrument that we know and therefore tolerate; metalogic is the disconcert that we do not know.

It is indeed curious the results that emerge when the method of self-reference is applied in our logical world. What occurs is nothing less than a bridge to metalogic. A self-reference appeals to the very essential sense that that which is self-referenced has, and this essentiality as

[40]We insist again that this judgment is not definitive, for at other times in the history of thought routes have been found to seemingly insurmountable paths. For example, and humbly bridging the gap, we understand that the appearance of the imaginary number i as an answer to the square root of one would also require adapting a different mental scheme.

we have said is the definition, is the metalogic.
Let's take the notion of "importance" as an example. When we ask "What is the most important thing?", whether we have a context or not, the answer must be that the most important thing is importance, because that is what determines what is important. That which we consider important is what is important, so the most important thing must be importance. When newspapers publish headlines, the headline is what is the most important thing that has happened and that we should all know. If we ask ourselves what is important, i.e., what is the most important thing and what should be considered first and foremost, then it is clear that importance must be the most important thing.
This is just one example of many, of the power that self-reference has to teach us that aspect of primary definition, which is nothing more than an expression of metalogic.

Perhaps a useful aspect that can be extracted from the disconcert caused by the existence of metalogic and $\mathbb{D}$ is the real importance of ideas. We have begun this paper by talking about the instantaneity of definitions, of ideas, and this can be expressed in a physical environment. We take up for this purpose the example of the theoretical pen of immense length, but without resorting to such an artifact. When one takes a normal pen and writes on a piece of paper, let us take as an example the sentence "Gadea is a beautiful name", there is a straight line from the writing (passing through the pen) to infinity, as we can see in IMAGE 23. When one writes, one knows that this straight line moves with the movement of the pen, writing the words, so that at the edge of the universe this movement of our straight line also exists, as illustrated in IMAGE 24. That information is not that it has simply traveled faster than the speed of light, but that it is instantaneous. If one writes "Gadea is a beautiful name", that information is instantaneously written by the invisible movements of the straight line with which that pen writes anywhere in the universe instantaneously. And we say anywhere in the universe because, as we see in IMAGE 25, we can detach a straight line from each position of the writing, creating a sphere that covers the whole space. That is, the universe is filled with the information "Gadea is a beautiful name" through the movement of the writing of such a phrase that follows each straight line that comes from it. That information exists because we know it, we know that "Gadea is a beautiful name", and we know that those straight lines of writing have moved invisibly through all of space, so we know that all of space knows that "Gadea is a beautiful name". It is true that this information is only in our possession, we have not transmitted it to anyone in the far reaches. But we know that this information is there, and that it is instantaneous.

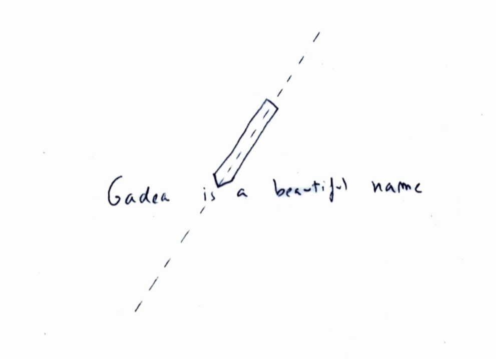


Figure 22: Invisible line that traces the phrase "Gadea is a beautiful name".

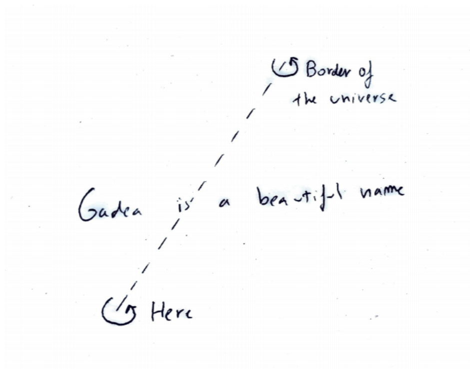


Figure 23: Diagram of the instantaneous movement of the invisible straight line from the paper on which it is written to the limits of the universe.

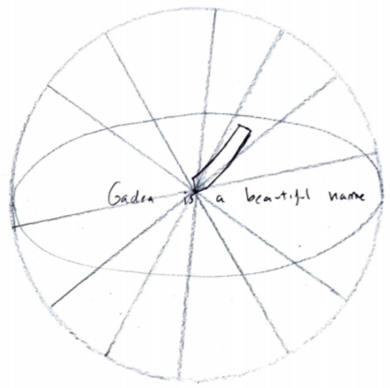


Figure 24: Representation of the sphere created by the invisible lines coming out of "Gadea is a beautiful name". This sphere covers the known universe, which is full of such instantaneous information.

We step forward with this thought and say the following. Any idea that we think, any word or information that we think, create or reproduce, has a physical way of originating from which a straight line of such creation of the idea can be derived. Let's say the head writes those thoughts as we write the sentence. So the universe is replete for us with that information, the universe is replete with our ideas and thoughts.

This is, as we have said, perhaps an applicable aspect to highlight of all that we have related about metalogic and $\mathbb{D}$. When we said that our world is embedded in the world of metalogic and $\mathbb{D}$, the world where all ideas and thoughts exist, we may find that idea realized on a more material level in what we have related in the previous paragraph. The universe is filled, at every point in its space, instantaneously and ubiquitously with our ideas, valid by logic or not.
We are the universe thinking itself. We are inevitably made of the universe, of its laws, of its matter and space, of its manifestations, of its everything. So if we are the universe thinking, it is consequent that the whole universe is and "knows" what we think, it is consequent that this

idea is in the whole universe, because it has been the universe that has thought it.
The universe is all idea, all definition. The conventional distinction between abstract reality (that which we attribute to thought, to ideas) and physical reality vanishes. The transcendence and relevance of these statements are unknown to us.