Linguistic Systems and Knowledge of Reality

J. Nescolarde-Selva[*], J.L. Usó-Doménech

Department of Applied Mathematics. University of Alicante. Alicante. Spain
*Corresponding author: josue.selva@ua.es

Abstract Linguistic systems are the human tools to understand reality. But is it possible to attain this reality? The reality that we perceive, is it just a fragmented reality of which we are part? In this paper the authors present is an attempt to address this question from an epistemological and philosophic linguistic point of view.

Keywords: *knowledge, formal language, gödelian thought, language, perception, reality*

Cite This Article: J. Nescolarde-Selva, and J.L. Usó-Doménech, "Linguistic Systems and Knowledge of Reality." *American Journal of Systems and Software*, vol. 2, no. 2 (2014): 33-40. doi: 10.12691/ajss-2-2-1.

1. Introduction

Whatever the real meaning and primary famous saying of Protagoras, *"Man is the measure of all things"* is ordinarily understood in epistemological sense, as a statement of the relativity of all human knowledge, of the impossibility of penetrate beyond the appearance of things. And this interpretation is consistent with the general trend of the times in which Protagoras lived. The doctrine of Heraclitus on the perpetual flow and universal vision of Parmenides that plurality and change are just a reflection of reality, the vain attempts to explain the nature of sensory perception and explain the illusions and misjudgments, along with the beginnings of consciousness (evident in Democritus) a subjective factor in the process of perception, all bordered philosophers to distrust what their senses showed and rely exclusively on their reason or intelligence. Reflection, however, it soon became clear that rational theories could not boast of greater consistency that experience of perception, and the inevitable result of this was that the relativism of Protagoras and his followers gradually became the skepticism of the Middle Academy.

The modern relativism, on the other hand, although it tends to become skeptical, was originally a reaction against the latter. Hume (1964) had suggested about the validity of universal judgments of synthetic character, Kant (1978) proposed that we should understand them as coming not from the apprehension of the real nature of things, but the constitution of our due minds. Kant argued that experience mental factor, hitherto neglected, actually has a capital importance: it is responsible for the space, time, categories and all forms of synthesis. It is the formal element that comes from the structure of the mind itself constitutes knowledge and makes it what it is. Hume was wrong to assume that knowledge is an attempt to copy reality. Not so. The world, as we know, the world of experience, is related essentially to the human mind, from which derives everything a unity, order and form. The obvious objection to such relativism is the thing-in-itself, which is not and can never be an object of knowledge. We were thus locked into a world of appearances, whose nature is constituted by our minds. We can never know what Reality itself is. Yet that is precisely what, according to Kant, we want to know. The fascination of Kant's philosophy lies in the fact that it gave full value to the activity, as opposed to the passivity or receptivity of the mind, but the unknowable *Ding-an-sich* was an abomination, fatally like consistency and its power to solve the problem of human knowledge. Must be eliminated at all costs, and the easiest way to do this is to abolish it in the bud, leaving us with a knowable Reality because Reality and knowledge are one thing, and in this task, the mind, human or absolute, plays a definitive role. The relativity of Reality, which took the place of the reality of knowledge, has been designed in various ways.

Occasionally, as in the case of Fichte and Hegel (1948), nature is opposed to the mind or spirit as two sides of the same thing: intelligence, or will, or even of the unconscious mind. Other times, Reality is conceived as an organic whole that somehow manifested in finite centers of experience, seeking to reproduce in them the Reality as it is. Unfortunately, they fail so that what they say, even being contradictory, must somehow be accepted as true. As true as other truths in the sense that they aim to express the Reality, but must be subject to an infinite reinterpretation before they become identical with that Reality to which they refer.

Modern absolutist, realizing the inadequacy of this position, have returned some independence to the physical order, which does not depend for its existence on my perception, but it depends on my perception with regard to the qualities and relationships we found in it. In other words, the "*who*" of the real world is on our perceptual organs (Nescolarde-Selva, Usó-Doménech and Gash, 2014). Or that reality, before it is known, is merely raw material, while what we call a "*thing*" or object of knowledge, is raw materials processed by an appropriate mental process that gives it the attributes of spatiality and like. Knowing, therefore, is to "*induce the form of knowledge on the subject*."

The relativity of Reality conceived that way, really means a return to Kant's position, except that instead of the thing-in-itself, with its character and unknowable properties, lies a kind of raw material, without qualities, attributes, or determinations, and consequently, as unknowable as the thing-in-itself, unknowable now because there is nothing to know. About that, modern idealism paired with pragmatism and humanism, who insist that Reality must be epistemologically seen as a raw material that is totally devoid of properties and totally indeterminate. The difference between the two views lies in that, for the idealist, the form is imposed on the subject by the very act by which we know it, while for the pragmatists, this does not happen until after a long nomination and experimentation process.

In his "*Essais sur la connaissance*" (*Essay on knowledge*) M. Fonsegrive (1909) discussed at length the issue of relativism, and in his opinion we must grant in a sense that knowledge is relative to our faculties. But, although he makes this concession universally, in fact his own theory is that only our knowledge of corporeal objects is what is considered strictly relative. We can know other minds as they are because we ourselves are thinking beings, and the internal manifestation of our mentality and yours are of a similar nature. But "*we know the essence of things, and the essence of our relationship with things. Among the laws of nature themselves, us know less than we do of our dealings with nature.*" "*What we know, what known as the subject.*" The main argument on which rests this relativism is basically the same as used by Berkeley in his famous "*Dialogue between Hylas and Filonio*" (Stoneham, T., 2002). Hence, what we know is never the subject as it is in itself, but only as to our knowledge of it. Obviously, the above argument is valid if the notions of "*being in itself*" and "*being known as*" mutually exclusive, but not so as conceived by the realist or anti-relativist. Being in-itself merely means being as it exists, although it is not known. This means that the nature and existence of being is prior to our knowledge of it (a fact that holds firmly Fonsegrive), and does not mean that being, as it exists, cannot be known. The Fonsegrive argument (1909) proves nothing against the opinion which states that the real nature of the object is knowable, then if the thing, in the abstract, is not the thing exists that is known, in concrete, no reason not to actually existing in nature can be known, or, in other words, it cannot be known as it is.

The argument that relativists to try to prove relativity of Reality are precisely similar to the above: We cannot think about real things, except insofar as they are objects of experience, from which it follows, its reality depends on your relationship with mind. This argument is patently false. All that proves is that things should be, or else become objects of experience in order to be known by the mind. But no proof that things must, by its very nature, be objects of experience. Unless Reality is intelligible and can fall within the experience, cannot become an object of thought. In no other way can the possibility of knowing the thing to assume its "connection to the mind." Definitely know something is to bring it to the field of consciousness, but it just continues to be conceivable that, things should be able to become objects of consciousness.

Psychological considerations compel us to admit that Reality, when experienced, transformed, or better, is reproduced as a psychic fact, but we cannot conclude that the reality itself, the reality that is the object of the experience and which refers to our experience as something external to itself, necessarily a psychic fact. The experience or perception obviously are conditions without which we cannot think anything about things, much less think about them as existing, but that in no way means that the experience and perception are conditions that things may exist. When we think, not ordinarily think of things as objects of experience, but simply as "*things*", real or imagined. And we say the properties of the things; we thought as belonging to them and not super induced by our minds. However, our natural way of thinking could be wrong. Even granting that what "*appears*" is the Reality, appearances can be false. They may be fully or partially to our minds and, consequently, did not reveal the nature of Reality, but rather their relationship with us-as-earners, and with our faculties and our organs.

Most of the arguments presented in support of this theory are based on psychology, and while psychology is good, the arguments are far from conclusive. We are invited to believe that abstraction and generalization are subjective processes involved in every act of knowledge, essentially modifying its contents. But abstraction is not a forgery, unless we assume that we are considering in the abstract as it exists in the concrete, that is, that there is not in connection with, and mutual dependence of other things, but isolated and independently, such as we understood it.

Nor is false generalization, unless we assume, without proof, that there really are individuals to who potentially applies our concept. In a word, neither these nor any other of the subjective processes and ways of thinking destroys the validity of knowledge if we distinguish, as it should be, which is purely formal and subjective, of what belongs to the objective content and refers to the actual order the causes and purposes.

Another argument is derived from the alleged relativity of sensation, from which all knowledge is derived in the scholastic theory of knowledge. It is said that the quality of sensation is largely determined by the character of our nervous system and, in particular, by the ending organs of our different senses.

1. First, it is at least probable, however, that the quality of sensation is determined by the stimulus, and in any case, the objection is unnecessary because the judge did not refer us to our sense object as such, but as qualities whose ignore nature, although we know that differ in varying degrees. Even if we should grant that the feeling is on our specialized organs of sense, we cannot conclude in any way that the knowledge gained by the sense involves a subjective determination.

2. Second, the data of the senses give us only qualitative differences, but also spatial forms and magnitudes, distance, motion, speed, direction, and these data are not based only mathematics, physical science but also in as the latter is related to the quantitative variations, and not only qualitative.

3. Third, sensory data, but are partly subjective, are an objective cause as a condition. Consequently, a theory that explains the data of the senses, successfully assigned conditions that are no less real than the purposes to which they give rise, at least partially.

4. Finally, if knowledge is really relative in the sense explained above, although it may satisfy our practical

efforts, can never satisfy the speculative. The goal of the speculative research knows Reality as it is. But knowledge, if only for appearances, would have no real meaning, and conceived as a kind of a priori idealism, neither would have a purpose.

The Kantian commonly taught that the relationship is the category of categories. The matter and motion "*consist of relationships.*" In fact, reality as we know it is nothing more than a set of relationships because "*the nature of the mind is such that no knowledge can be acquired or expressed, and consequently no real existence can be conceived if not to through a system of relations*" (Renouvier, 1891).

This form of relativism can be called objective, to distinguish it from relativism we have discussed above, and which, in fact, is usually combined. This is, first, a theory of the nature of knowledge, but also a metaphysical knowledge to identify with Reality. Such a view is a theory of the nature of the relationship is very different from that of the Scholastics. For the latter, the relationship requires:

1. A subject to which it belongs.
2. Something special in the subject to explain what it preaches.
3. A term, other than itself, to which it relates.

A relationship, in other words, according to modern, presupposes their "*terms*". There is a mysterious and invisible link that somehow unites two aspects of one thing and makes them one. A relationship can be mutual, but if so, there are actually two relationships (e.g. Paternity and filiations) belonging to different subjects, or, if the same, arising from different principles. It is true that in science, as in other things, we learn a relationship without being able to discover the nature of the relationship linking entities. We know, for example, the pressure and temperature vary proportionately in a given mass of gas whose volume is kept constant, not knowing with certainty the final nature of the pressure and temperature. But we do know something about them. We know they exist, that each of them has a peculiar nature, and it is because of this nature that begins the relationship between them. We cannot know a relationship without knowing some of the things she relates, since the relationship presupposes their "terms". Therefore the universe cannot consist of relationships, but it must be composed of interrelated things.

2. The Linguistic Access to Reality

Our starting point is the recognition of Reality that is beyond us, but we can get in touch in different ways. We have two great tools to access this reality:

1. Logical systems, to organize it and make it so manageable.
2. Linguistic systems, to make it strong and well able to share it.

Thanks to them (but not only them) build scientific theories and philosophical systems, discuss, argue, give lectures, write books, etc,... build new tools that we use to try to domesticate reality. The justification for this device is practical: we need to deal with Reality in order to operate on it, even when handling the somewhat disfigure. Given this radical difference between a continuous,

complex and vast reality, and chop some tools that simplify and reduce to a manageable size.

There is an inadequacy of language and discursive thought to express the reality, and, in general, the failure of systems to think about the world around us. The systematization, on the one hand is a natural tendency of the human spirit "as complete, makes everything symmetrical" and, moreover, is a trend that pays off many times, as the systematization brings simplicity and therefore, ease of management and foresight. But we would be dogmatic if we thought that useful tool can replace the real thing, or it can be applied with equal success to any reality. Put another way, the limitations of the two systems are:

1. Simplify systems; there is something of the Reality that the scheme does not catch.
2. Each individual situation is different; wanting to implement a known system instead of getting to the task of thinking is simply to refuse to look at the reality in front.

A particular case of this mismatch between our tools and Reality shows noting the conventional character limits classifications. In the areas of our expertise, that is labeled as "*matters of degree.*" We must recognize the vagueness of many of the concepts that is chopped reality. Since this is offered as a continuous gradual, our classifications artificially divide Reality and thus to try to apply shadow areas, cannot be said no thought of absolutely clear and precise manner such object is or is not within such class. But recognize the conventional nature of many classifications (and, therefore, the vagueness of its application) does not mean giving up your use but this recognition leads to know how to use the classifications without being driven by them. The classifications are very useful tools: are schemes to think, to describe, to teach and even to facilitate observation. But know how to use a classification needs to be aware of this instrumental. When this is understood, nothing prevents even that can serve different classifications for the same things: everyone can contribute something useful to the description of the reality that we know. And, even more, the next step in learning to think that complex reality will know that all language can be seen as a great filing system, and that the right attitude is, again, the use of it without being overcome by it.

When we apply an attribute to a subject, what we are doing is to find a place under a simplified scheme in which the complexity of reality never quite fit. Consequently, to think it is necessary to distinguish the reality of their expression. And although this may seem banal advice, *things are as they are*, but when we try to explain how they are using the language, the nature of this tool prevents us from doing so finely tuned: we get always, whatever we try to do more or lesser generality, is a schematic representation, and therefore unsuitable in nature. Hence the danger of transferring the ontological plane that belongs to the linguistic level (attribute, for example, to the contradiction with the reality that sometimes we think it is useful). Again, think well requires recognizing the instrumental nature of Science, i.e. requires realizing that what they give us is not Reality and not the whole Reality. Moreover recognition that, is not to deny the true nature of science knowledge. The sciences are systems that humans use to understand the

world. Its schematic character provides distinct advantages over other types of knowledge (accuracy, reduction laws, predictability). But that same schematic character is the cause of a failure it is important not to forget.

One advantage of philosophical thought about the scientist is that, being less mediated by previous schemes is able to recognize the difference between reality and systematization. The philosophy acquires, in addition, a paper clarifying respect to science. In his effort to think more directly the reality, the philosopher realizes the systematization of all instrumental and is thus more able to place science in place, recognizing its value but also its limitations. Differences between knowledge are not essential, but one of degree.

Human knowledge is the deployment of a unique way to open up to the world, but it moves to deepen successive levels of analysis. For example, a certain level of knowledge would be that of a scientist who studies the movement drawing on the notion of force, but it is possible to move to a deeper level, in which the scientist analyzes the notion of force, even assuming assumptions (without analyzing) data of perception, and it is possible, still, a third deeper level where you begin to analyze the data before budgets, thus it passes insensibly to philosophy. Now, each new level represents a different level of generality and abstraction, on the one hand, and of clarity and precision, on the other. To deepen the knowledge, passes from the concrete to the abstract and from the general to the less general, and of the diaphanous to the opaque. All these levels are deep knowledge, not all knowledge is allowed to seize the same way.

The highest degree of strength corresponds to the sciences: we have created tools with which we lock (or try to lock) accurate molds reality, and therefore "*is very easy to see and describe*", i.e. it is easy to think linguistically the Reality and communicate it to others. Captured by a language with precise meanings, knowledge is solidified; we can grasp with hands and lean on him. The systematization, rigid schemes of science are like a skeleton holding it up. But not just knowledge with scientific knowledge: it is possible (and inevitable) move to deeper levels. But as we go deeper, that is, as we think philosophically, we left those precise tools and try to get in touch with reality more directly, or what is the same, roughly bounded by fixed patterns. Without the rigid systems skeleton, knowledge then becomes fluid: the words are no longer defined as a contour and therefore is more difficult to communicate and agree.

The left does not grasp, is the price paid for a plastic knowledge, which is better suited to the chiaroscuro of Reality. Delving abandons a very precise knowledge of a small piece of Reality, to scroll increasingly confused knowledge of ever wider areas of Reality.

At the level of science schematized reality is easy to describe, and the language puts everything in its place, but what we see is thus only a very poor picture of what we had before. In-depth analysis widens the scope of known reality, but in confusion: "*a more light more confusion*", ie the more we soak in reality, is less systematized. And we realize, then, the artificial nature of those tools, that deep levels play no role. The attitude is good with the tools to take them for what they are and use what they are designed for.

Science gives us knowledge of reality that has the advantage of clarity and precision: with sharp tools is much easier to handle reality (make it understandable data, make predictions, and discover new data...). But it would be absurd to believe that it is known to all, like trying for the same precision philosophy of science. In contrast to the strength of science, the advantage is that philosophy is concerned, in general, abstract realms of life problems but to pay the price of being content with knowing less solid.

3. Reality and Linguistic Systems

There are different kinds of objects, which are characterized by different mental acts through which perceive from its environment (Meinong, 1904). The objects of perception are different from those of thought but the latter are no less "*objective*" than the previous ones: they "*apprehended*" by thought, but not consist of it. Meanings and judgments are examples of this second type of object: Meinong's terminology, they "*hold together*" (*bestehen*), while individual beings and qualities "*exist*". In this sense, the objects of thought can be real without existing in the technical sense given by Meinong, and mathematical objects are of this kind. An intellectual inquiry is not linked to the empirical existence of objects, no existential presupposition is needed for their objects come and be given "*real*" in a sense exactly specific. The object as such is indifferent to the nature of existence.

Analysis is needed of how speaking a language can be used on a given domain of objects. The first condition is (Agazzi, 1992) that these objects are there, and this is done through an act of speech, but through the presence of these objects in the subject's thinking. The phenomenological truth and the phenomenological situation such that an object just by being there, gives the subject an irrefutable and perhaps the only irrefutable witness him. This presence is the phenomenological situation covering this term through all possible ways to be present, and to suspend any judgment about the ontological status of what is present. The phenomenological truth has the following characteristics:

1. It is unstable, because it enables the subject to remain within the Kingdom of the Truth when he leaves the immediate presence of being.
2. It is private, because the presence of certain objects only to the individual and are really and instantly present.

It is possible to say (Agazzi, 1992) that the fundamental function of language is to overcome these limitations, enabling the subject to "*preserve*" the truth somehow beyond the moment of its immediacy and making intersubjective. Thus, the characteristic of the truth that is intrinsic to the phenomenological situation is transferred to the language, as demonstrated by the fact that the common use of the term "*true"* referring to the propositions of a language. And when is attributed primarily denote a state of the objects which are present phenomenologically. But the language itself can enter the field of presence, and this, in two respects:

1. Is present with its structures and forms.
2. Is "*denotant*", that is, regarding the presence of another sector.

The referential position is the position of the phenomenological presence of the object. And the absolute truth of a sentence is the coincidence with the situation of the phenomenological presence. The language should have tools able to retain the presence of objects even if they are really there. And these tools are the meanings thus appear to be drawn from the referential situation, but not coincident with it, although even stay out of this situation. Meanings or are only partially understanding and "*faithful*" with respect to any particular phenomenological presence or referential situation might indicate. The concept "*man*" does not contain all the details of every single man could be denoted through it, but it is not doing that which is part of the condition to denote men who do not share all the details.

The concepts are mental entities and, as such, are private. For collective evolution should be associated with the expressions of a language. This step determines the formal level, defined here as the fulfillment of conditions for the explanation and no ambiguity, so that the correct application of these conditions should enable for man to understand what other "*means*" using certain expressions. This phase entails the creation of a complex structure, since the small size of the present phenomenological analyzes not only through a complex network of mutually interwoven meanings, but the language itself must then somehow reproduce the complexity of this meaning - structure so that it can express. This is the reason why action language semantics or ability to convey meaning, necessarily presupposes the possession of a certain syntactic structure. On the other hand we have a syntactic structure, different components of which can be seen as having the ability to convey meaning (Carnap, 1942, 1964, 1967; Chomsky, 1963, 1965, 1969) in a way analogous to the meanings that are able to denote referents. The significant propositions also denote phenomenological presence say they are true, and an eminent part of the syntax is the exploration of the domain structure of "*true statements*".

But a language (formal or otherwise) on the one hand says "*more*" and the other "*less*" about what is true of intentional or related models (Agazzi, 1992). This means that no language can fully express and properly phenomenological presence. The linguistic description of the subject is cheating with respect to what is present to his thought. Moreover, a party receiving a Subject linguistic communication will translate to denote a presence for him, and added additional failure. This is equivalent to saying that absolute truth is not intersubjective. Another limitation is that it can cover the whole domain of true propositions expressible in language (Nescolarde-Selva and Usó-Doménech, 2013[a,b,c,d]; Nescolarde-Selva, Usó-Doménech and Gash, 2014; Nescolarde-Selva, Usó-Doménech and Sabán, 2014; Usó-Domènech and Nescolarde-Selva, 2012).

Semantic Incompleteness Principle (Nescolarde-Selva and Usó-Doménech, 2013[a,b]; Usó-Domènech and Nescolarde-Selva, 2012): *It is not possible to totally characterize a structure of objects or processes, through a language (formal or not), or to totally even dominate a portion of "truth" that this language can express on these objects or processes through its deductive operation.*

Consequences:

1. There is an inadequacy of the semantic dimension relative to the benchmark or phenomenological situation.
2. There is a mismatch of the dimension in relation to the reference syntactical semantics.

Language is relative as well. How can we speak about absolute being, then? We can and we cannot. But that we cannot completely speak about it, it is not a reason to stop speaking about it (Wittgenstein, 1953), because we can incompletely represent its completeness We would not be able to speak about anything, because languages are incomplete. Language is used inside a context. Depending of this context the language will be different.

Semantic Incompleteness Principle is a consequence of Gödel's famous theorem (1931) and NWET Theorem (Usó-Domènech and J. Nescolarde-Selva, 2012, 2013)[1].

Mathematical instrumentalism construes some parts of mathematics, typically the abstract ones, as an instrument for establishing statements in other parts of mathematics, typically the elementary ones. Paseau, 2011, argues that though some versions of mathematical instrumentalism are defeated by Gödel's theorem, not all are. By considering inductive reasons in mathematics, we show that some mathematical instrumentalism survive the theorem.

4. Formal Languages: Gödelian Thought

Referring to formal languages, mathematicians are reluctant to refer to the "*existing concepts behind the symbols*" as meaningless, or to claim that mathematical entities are non-existent, and it is sufficiently justified because of the pejorative nature open such terminology. The ontological status of mathematical entities, as matter of paradox, has a long history of philosophical debates, perhaps because of their close relationship to the problem of universals. Gödel strongly stated his own position (Gödel, K, 1934, 1964[a,b]):

Classes and concepts may, however, also be conceived as real objects, namely:

---

[1] Theorem of Non Wished Effects (NWET) (Usó-Doménech and Nescolarde-Selva, 2012, 2013) derived of Gödel theorem had demosted that the goal of reducing Reality to systemic conception (models) cannot be totally reached. For each constructed systemic conception, can happen to it one of the two following things:
1. Either some allowed responses are not produced or
2. Else some forbidden responses are produced.
What would it mean to say that Reality is reduced to a given systemic conception? It would mean that system produces as response each allowed response of the Reality, but also forbidden responses for the system. That is to say: any allowed response is produced from the system but that forbidden response is so produced. To the forbidden responses produced by the system we will denominate no wished effects.
In economics are often called "perverse effects". In the social sciences are *unintended consequences* (sometimes unanticipated consequences or unforeseen consequences) are outcomes that are not the ones intended by a purposeful action. The concept has long existed but was named and popularized in the twentieth century by American sociologist Robert K. Merton. As example prohibition in the 1920s the USA, originally enacted to suppress the alcohol trade, drove many small-time alcohol suppliers out of business and consolidated the hold of large-scale organized crime over the illegal alcohol industry. Since alcohol was still popular, criminal organizations producing alcohol were well funded and hence also increased their other activities. Similarly, the war on drugs, intended to suppress the illegal drug trade, instead consolidates the profitability of drug cartels.

1. The classes as "*pluralities of things*" or like structures which consist of a plurality of things.
2. The concepts as the properties and relations of things that exist independently of our definitions and constructions.

It seems that the assumption of such objects really is as legitimate as the assumption of physical bodies and there is enough reason to believe in its existence. There is the same sense necessary to obtain a satisfactory system of mathematics as well as physical bodies are necessary for a satisfactory theory of our sense perceptions and in both cases it is impossible to interpret the propositions.

These paragraphs should be tested extensively formulated carefully because they contain subtle but crucial distinctions. It must be admitted that there is an important difference between Gödel's statement that "*Classes and concepts may, however, also be conceived as a real object*" and "*classes and objects are real objects.*" If it were a question of just how classes and concepts have been designed, then the fact employ "*thing*" in the language of mathematics could be considered as an extension of our everyday expected discourse, then one would have a fit, and heuristically valuable exposure method, perhaps devoid of ontological presupposition. Thus the choice of language does not seem justifiable epistemological priority areas, where Gödel apparently discovered that in the case of sensory perceptions, sense data are epistemologically priority to physical objects, the latter being an assumption necessary theoretical.

Gödel makes a strong comparison between "the question of the objective existence of the objects of mathematical intuition" and the "question of the objective existence of the external world" which he considers to be "an exact replica". We are inclined to believe that this comparison does not respond to the fact that mathematics is not universally understood in the same way that the physical world which is "accessible" virtually everyone. Apply "mathematical intuition" in this way tends to establish that the mathematician is a "visionary", which is not precisely the intention of Gödel, because we like to believe that "mathematical truths" are as accessible as the "physical truths" i.e. common physical objects. However, if what Gödel says is that "physical intuition" is the intuition of physical, the comparison is more accurate, since physical entities are perhaps as equally "abstract" as those of mathematics. Arguments involving "our knowledge of the external world" are mostly a level of "furniture".

Similar difficulties exist in the problem of mathematical objects and the problem of physical objects. In both cases, our everyday discourse is a "*language of the thing.*" Although the question of our perception of physical objects has centered around the discussion of sensory data, it is difficult to build a similar entity for mathematics. Gödel, in his analysis of the Russell comparisons between "*axioms of mathematical logic and the laws of nature and logical evidence to sensory perception*" said arithmetic is "*elemental mastery indisputable evidence that compares more appropriately to sensory perception.*" However this does not answer the question of how we "*perceive*" arithmetical truths. For the manipulation of symbols, this reduces in some way to the perception of physical objects, i.e. the symbols themselves.

The "*logical evidence*" or "*math data*" can be seen as a test of numerical computations, and reasoning from tables and diagrams and as follows:

The theorems of number theory are often generalizations of the "*observation*" of the calculations. Statements about prime numbers and multiples numbers can be considered as generalizations (laws) obtained from the convention that 7 is a prime, and 6 is a multiple, etc. Euclid's Theorem, claiming the infinity of prime numbers, can "*verified*" by the calculation as indicated above. Axioms of arithmetic allow us to demonstrate this assertion in general, to make it possible for these sensory perceptions can be deduced. For any given prime number, we have always been able to obtain one more.

Tables and diagrams are shown to be the heuristically valuable in algebra and geometry. Historically, the geometry is the science of measuring physical objects. Tables can be used to list the elements of a group and the results of a particular composition to "*verify*" the theorems of group theory, such as "*counting*" the number of its subgroups. Such tables are an algebraic aspect of the "*experiments with physical objects.*"

The issue of computability is down to the ability to perform specific operations on the theoretical calculating machines, i.e. the task of representation "*physical objects*": the algorithms are frequently called calculations. This name originates from *calculi* (small pieces of limestone) that the Romans used for the calculations.

Many problems "*large cardinality*" stem from the observation that certain infinite cardinal family have particular properties, and the question is about the existence of other (usually non-enumerable).

Those propositions which, if true, are extremely strong axioms of infinity... Contradicting Mahlo axioms, the truth (or consistency) of these axioms are immediate consequence of the basic intuitions underlying abstract theory of sets. However, the new axioms are based on fairly strong arguments from analogy, such as the fact that are implied by the existence representation theorem Stone's of Boolean algebras with operations with many elements.

If credible "*perceive*" or "*experience*" calculations examining mathematical objects and constructions, is in a position to offer an interpretation of Gödel '*real*'. Gödel stated that he "*believe that mathematical objects exist independently of our buildings and our having an intuition of them individually...*". If mathematical objects were finite in number, "*an intuition of them individually could be*" possible. But this is not even possible for integers. For example, there is a finite and effective procedure by which we can test to see if an integer is prime number. Although it is possible in principle to test any given integer (not taking into account the amount of time and material required due to the current state of technology), it is impossible to test all integers. When you accept Euclid's theorem, one must accept the existence of a number is prime by Theorem Euclid, not because it has been proven.

So we must recognize the existence of mathematical objects that we are unable to examine (experience), even if the domain is restricted to the infinite potential objects. Then the "*phenomenalist*" mathematician, who supports mathematical truths to the extent that they are verifiable, to examine calculations and constructions, shall be required to place a limit on the size of finite structures

permitted on the technological ability to scrutinize such objects. However, it may be objected that the "*phenomenalists*" mathematicians could accept these truths, which are theoretically "*testable*" by evidence, and cannot reject the potentially infinite need. Then appear as "*theoretically verifiable*", which it inevitably reduce some form of "*normative behavior*" of mathematical objects, and the problem reappears in a different form.

Let us realize that Gödel distinguishes the existence of knowable: discussing the third form of Vicious Circle Principle, indicated that mathematical objects assumed to exist independently of our constructions, the third form of the principle is not violated if the means presume to assume existence and not for cognition. This tends to corroborate our identification of "*experiential knowledge*" with "examining constructions and calculations." Although "*phenomenalism*" mathematical extends to allow potential infinity, allows classical analysis, because it is unreasonable to maintain that a whole is uncountable "*in principle subject to question."*

Taking the classical analysis as a criterion for "a satisfactory mathematical system", we are forced to acknowledge the existence of mathematical objects, which have no way, even from the beginning, to examine. Thus, mathematical objects exist independently of experience, as opposed to be phenomenal or apparent, and are therefore real. That is, replacing "regardless of our buildings and our having an intuition of his individuality" to "independently of experience."

With the real interpretation given above, Reality is nothing more than a system of real objects. For a system of real objects, we mean that the objects of mathematics are governed by regularities. Axioms are mathematical objects as physical laws are to physical objects. One argument in favor of this view is the fact that no mythological allusion is in any of the writings of Gödel. Gödel seems to be saying that mathematical objects are so specific, so stable, and as well educated as physical objects, and that the axioms actually govern their behavior. In this respect, mathematical objects are neither illusory nor ephemeral, not any invention or any allegory. They are real. It can be seen, however, that one aspect of Gödel use of existence, its relationship to the criterion of clarity intimate, allows a comparison to their use other philosophers Descartes and Hume in particular. Gödel stated that he "only requires general math concepts should be clear enough value for us to recognize their courage and truth of the axioms about them. ...". Here we find a subtle but important distinction between intuition and clarity. We have an intuition of what can be said is clear. The concepts, for example of infinite totalities may be clear, however, our intuition of these entities may be quite weak. For example our intuition of elementary arithmetic and logic allows us to formalize such theories with strong enough convictions and general acceptance. Our intuition of large cardinal arithmetic, and logic exists about them is much weaker. No one can say that these arguments are immediate. However, most mathematicians would agree that these concepts are unclear, although it is something basic or primitive. For us to be able to distinguish two different powers of infinity is the evidence for the belief that the Dower concept of infinite is clear.

Descartes (1960) discusses the concept of a triangle in a manner remarkably similar to the position held Gödel respect that mathematical entities are not mind-dependent. Descartes's commentary on the case of a triangle "maybe there can be anywhere in the world no figure outside my thought" raises a problem that some critics seem to misunderstand Gödel. Gödel is indicating that there is an analogy between the existence of mathematical objects and the existence of physical objects. He never claimed to be physical objects, or existed in space and certainly not in any "mythical" sky. How can there then? Perhaps in the sense of Max Hume (1964):

'Twill not be surprizing after this, if I deliver a maxim, which is condemn'd by several metaphysicians, and is esteem's contrary to the most certain principles of human reason. This maxim is that an object may exist, and yet be no where: and I assert, that this is not only possible, but that the greatest part of beings do and must exist after this manner.

The computability or physical interpretations are of secondary importance. Depends if it is understood in the sense of actual real physical existence (in space and time), and then mathematical objects are not real. Subsequently factual and reality are often considered synonymous, and if it can be a source of confusion.

Another aspect of existence in mathematical contexts should not be confused with "*the existence in terms of clarity*", is the existence in the sense of consistency. Mathematicians often wonder if there are certain objects which properties are specified. In the context of the discussion, it is clear that the question being asked is whether the assumption of the existence of such objects is consistent with other axioms that have been alleged, and unfortunately, they are not always specified.

One might ask whether Gödel believed that mathematical truths are "*eternal*" since he thought that mathematical objects exist "*independently*" of the experience. We cannot see the inconsistency of mathematical existence and eternal mathematical truths. We can resist any effort to read "*mythology*" in their thinking about the existence of mathematical objects. Gödel's realism, then, can be seen as a form of scientific realism without mythological or ontological commitments. So your ideas agree with Carnap (1942, 1964, 1967), and are a fact indicative of his belonging to members of the Vienna Circle.

Ontological questions arise in considering mathematical objects as real objects, "*believing in its existence*" represent an area of contention among many philosophers who, for the most part, they agree on the methods and content of mathematics. These critics do not dispute the clarity or the need for a proper development of the language, as it was understood by Gödel, but cannot agree with the *ontological status* of mathematical objects. Arguably the viewpoint that the content and mathematics methods are crucial, however, ontology is secondary or should be ignored completely. Therefore it is considered that these disagreements do not make any changes to the content or mathematical methods, because they are seen as linguistic or verbal disputes, arguments over words and not things.

Gödel's realism, while similar to Locke and Leibniz, emphasizes the fact that "forces us axioms taken as true." This neither answers a question, nor touched nor Locke and Leibniz, why choose a system or a set of axioms, and

not another and that the choice of a mathematical system is not arbitrary.

Recently, Kjeldsen and Carter, 2012 addresses the topic of the growth of mathematical knowledge with a special focus on the question: How are mathematical objects introduced to mathematical practice?

5. Conclusions

According to Watts (2006), to study Eastern philosophies, especially Zen, it is remarked that the world of events and entities are measured terms than phenomenological realities. To fulfill its function (linguistics), the names and terms should be syntactic fixed like all the other units of measurement and comparison. But their use is so successful that the danger of confusing these terms of measurement and comparison (model) with the measured world, to confuse convention with ontology, to reduce the rich reality to the model. Linguistic structure which we form judgments or propositions not allow a transitive verb without a subject or predicate. As says Watts (2006), when there is "*knowledge*", the grammatical convention requires the existence of the knower and that which is known. Man is so used to it that when we talk and think, to build our models, does not realize that it is just that, a convention, and that does not correspond to the actual experience of knowledge.

The greatness and tragedy of man, of his greatest adventure, knowledge, oscillates between two mythological characters Prometheus and Sisyphus. The first stole fire from the gods. The second was condemned eternally up a rock and reach the summit, which is rolled at the foot of the mountain, so, eon after eon, resuming the work useless. Stone of Sisyphus, with its eternal and useless foot roll to the top. The fire of knowledge itself drags the ashes of ignorance. Linguistic structures themselves impede the full apprehension of Reality.

Just being aware of it, just knowing our limits, we can begin to catch a glimpse of the Reality that is being continually denied. And the only way we will achieve a basic principle of knowledge, which is so forgotten: humility.

References

[1] Agazzi, E. 1992. Some Philosophical Implications of Gödel's Theorem. In: *Kurt Gödel. Actes du Colloque, Neuchâtel 13-14 juin 1991.* (Denis Miéville, editor). Travaux de Logique. 7. 129-159.

[2] Carnap, R. 1942. *Introduction to Semantics.* Cambridge. Mass.

[3] Carnap, Rudolf. 1964. *Meaning and Necessity*, 4th ed. Chicago.

[4] Carnap, Rudolf. 1967. *The Logical Structure of the World/Pseudo problems in Philosophy*, trans. by Rolf A. George. Los Angeles.

[5] Chomsky, N. 1963. 'Some basic concepts of Linguistic'. In: *Handbook of Mathematical Psychology. Vol. II.* (Edit. Luce, Bush and Galanter). John Wiley & Sons. New York, London.

[6] Chomsky, N. 1965. *Aspects of the Theory of Syntax.* MIT Press. Cambridge, Massachusetts.

[7] Chomsky, N. 1969. *Syntactic Structures.* Mouton, La Haye.

[8] Descartes, R. 1960. *Meditations on First Philosophy*, 2nd ed., trans. by Laurence J. Lafleur. New York.

[9] Fonsegrive. M. 1909. *Essais sur la connaissance.* París. (In French).

[10] Gödel, K. 1931. Über formal unentscheidbare Sätze der Principia Mathematica und verwandter Sistemae I. *Monatshefte für Mathematik und Physik,* 38. 173-198.

[11] Gödel, K. 1964[a]. Russell's Mathematical Logic. *Philosophy of Mathematics*, ed. by P. Benacerraf and H. Putnam. Englewood Cliffs, 1964, pp. 211-232.

[12] Gödel, K. 1964[b]. What is Cantor's Continuum Problem? *Philosophy of Mathematics*, ed. by P. Benacerraf and H. Putnam. Englewood Cliffs, pp. 258-273.

[13] Hegel, G.W.F. 1948. *Wissenschaft der Logik.* Verlag von Felix Meiner. Leipzig. (In German).

[14] Hume, D. 1964. *A Treatise of Human Nature*, ed. by L. A. Selby-Bigge, Oxford,

[15] Kant, I. 1978. *Crítica de la razón pura.* Madrid: Alfaguara. (In Spanish)

[16] Kjeldsen, T. H. and Carter, J. 2012. The growth of mathematical knowledge-Introduction of convex bodies. *Studies in History and Philosophy of Science Part A*. 43 (2). pp. 359-365.

[17] Meinong, A. 1904. *Über Gegenstandtheorie.* Leipzig: J. A. Barth. (In German).

[18] Nescolarde-Selva, J. 2010. *A Systemic Vision of Belief Systems and Ideologies.* Doctoral Thesis. Universidad de Alicante. Alicante. Spain.

[19] Nescolarde-Selva, J. and Usó-Doménech, J.L. 2013[a]. Semiotic Vision of Ideologies. *Foundations of Science.*

[20] Nescolarde-Selva, J. and Usó-Doménech, J., L. 2013[b]. Reality, System and Impure Systems. *Foundations of Science.*

[21] Nescolarde-Selva, J. and Usó-Doménech, J., L. 2013. Topological Structures of Complex Belief Systems. Complexity. Vol. 19, 1. pp. 50-64.

[22] Nescolarde-Selva, J. and Usó-Doménech, J.L. 2013[d]. Topological Structures of Complex Belief Systems (II): Textual Materialization. *Complexity*. Vol. 19, 2. pp. 50-62.

[23] Nescolarde-Selva, J. A., Usó-Doménech, J.L. and Gash, H. 2014. A theorical point of view of reality, perception, and language. *Complexity.*

[24] Nescolarde-Selva, J.A., Usó-Doménech J.L. and Sabán, M. 2014. Linguistic Knowledge of Reality: A Metaphysical Impossibility?. *Foundations of Science.*

[25] Paseau, A. 2011. Mathematical instrumentalism, Gödel's theorem, and inductive evidence. *Studies in History and Philosophy of Science Part A*. 42 (1). pp. 140-149.

[26] Renouvier. 1891. *Les dilemmes de la metaph. pure.* París. (In French).

[27] Stoneham, Tom. 2002. Berkeley's World: An Examination of the Three Dialogues. Oxford: Oxford University Press.

[28] Usó-Domènech, J.L. and Nescolasrde-Selva, J. 2012. Mathematical and Semiotic Theory of Ideological Systems. Lambert Academic Publishing. Saarbrucken. Germany.

[29] Usó-Doménech, J and Nescolarde-Selva, J. 2013. An introduction to Alysidal Algebra IV. Kybernetes. Vol. 42, 8, pp. 1235-1247.

[30] Wittgenstein, L. 1953. *Philosophische Untersuchungen.* Blackwell. Oxford.

[31] Watts, A. 2006. *El camino del Zen.* RBA. Coleccionables. SA. (In Spanish)