5. The Neutrality of Logic

5.1. Attempt of anticipation of some logical form ("hidden variable problem" and the compulsory distorted projection metaphor)

In the *Tractatus*, Wittgenstein asks himself how people can virtually understand an unlimited number of sentences through a finite basis of names (4.025-4.0311). This question seems to refer itself naturally to compositionalism⁶⁶ _ or the conceptualization of language as a unique, stable and hierarchical structure _ as an answer. Stephen Read, very elegantly, begins his chapter on *what there is and what there is not* in his book *Thinking about logic* with this kind of issue, preparing for the reader the theoretical ground for this compositionalist build, yet not mentioning Wittgenstein:

"How is language possible? How is it possible, from a finite and learnable stock of basic vocabulary in a language, to form indefinitely many novel utterances, new propositions expressing thoughts which have not previously been framed? For it is as a glance at a dictionary can reveal, it is small compared with the immensity of sentences which make up the books in the libraries of the world. Few of these sentences are identical. Few of the sentences we read are ones we have seen before. How is ti possible for the reader to understand them? How is it possible for their authors to conceive and compose them? The answer is obvious: but its implications are powerful. We can learn a language because its vocabulary and its grammatical rules are relatively small _ each can be contained in a small number of volumes; a multi-volume dictionary like the Oxford English Dictionary contains far more than the vocabulary of most individual speakers _ and even that is contained in some ten or twelve volumes, a tiny part of the whole library that contains it. The grammatical rules permit the creation of indefinitely many sentences out of this vocabulary. To understand these new sentences, the meanings of the individual works are put together according to the structure given by the grammar." (Read, *Thinking* about Logic, p. 121)

⁶⁶ The compositionalism can be seem stronger than the truth-functionality (based on the notion of truthfunction), because we can think about some compositionality also in the elementary propositions, precisely because they are formed by the composition of names. However, we can ask ourselves: Does it make sense to identify compositionalism in the sub-propositional level? I believe not because there are no free names or objects in the world, that is, names or objects that lie outside some propositions or state of affairs, which could be then articulated in propositions and state of affairs. Rigorously, in this tractarian period, in a certain sense, there is nothing more elementary than elementary propositions or state of affairs. Their components only exist while components of this complexes. In this way, I hold the notion of a sub-propositional compositionalism as false. In this period, for the *Tractatus*, compositionality then collapses itself with truth-functionality. In other words, when there is propositional complexity we have truth-functions and vice-verse.

The natural interpretation of this "magical" plastic feature of language to accommodate these only illusory conflict between a finite basis and the generation of infinite complexes is indeed the compositionalism and its kind of atomism. That is, if we have an entire atomic basis and all the possible combinatorial rules of its elements, we can, in principle, generate all the combinations. The sense and the truth-values of the complex propositions would come directly and exclusively from the elementary propositions in their constitution. And if the elementary propositions are meaningful, so too must any combination of them be meaningful. The infinitude in constructing complex propositions comes from the possibility of indefinitely iterate operations over this finite or non-finite basis. This issue was so important for the early Wittgenstein, much influenced by the themes of Frege's and Russell's Logicism, that he devoted himself to solve in the *Tractatus*, despite it being rather a project or a program than a final work, any kind of problem which could affect this assumption. A possible counter-example could then be intensional contexts of the form: "A believes that p" or "A thinks that p", where the truth of "p" does not determinate or influence the truth of the composed sentence. Wittgenstein claims then:

"In der allgemeinen Satzform kommt der Satz im Satze nur als Basis der Wahrheitsoperationen vor. Auf den ersten Blich scheint es , als könne ein Satz in einem anderen auch auf andere Weise vorkommen. Besonders in gewissen Satzformen der Psychologie, wie "A glaubt, dass p der Fall ist", oder "A denkt p", etc. Hier scheint es nämlich oberflächlich, als stünde der Satz p zu einem Gegenstand A in einer Art von Relation. (Und in der modernen Erkenntnistheorie (Russell, Moore, etc.) sind jene Sätze auch so aufgefasst worden.) Es ist aber klar, dass "A glaubt, dass p" sind: Und hier handelt es sich nicht um eine Zuordnung von einer Tatsache und einem Gegenstand, sondern um die Zuordnung von einer Tatsache und einem Gegenstand, sondern um die Zuordnung von einer Tatsache und einem Gegenstand, sondern um die Zuordnung ihrer Gegenstände. Dies zeigt auch, dass die Seele ______ das Subjekt, etc. _____ wie sie in der heutigen oberflächlichen Psychologie aufgefasst wird, ein Unding ist. Eine zusammengesetzte Seele wäre nämlich keine Seele mehr. Die richtige Erklärung der Form des Satzes "A urteilt p" muss zeigen, dass es unmöglich ist, einen Unsinn zu urteilen. (Russells Theorie genügt dieser Bedingung nicht)." 5.54 -5.5422

Such propositional attitudes would be opaque extensional devices. They would be then counter-examples to the tractarian bet on the strict compositionality of the entire language, as with the analysis of colors in 6.3751. Just like the analogy to hammer and nails, if we discover a nail that cannot be nailed by the hammer, that means, by the tractarian time, that this nail is no nail, or that the problem is indeed no problem. Wittgenstein's exit here in the *Tractatus* is to

address A as a complex which is sent to a complex p, in such a way that the truth and the sense of the proposition "A believes that p" could still be reduced to the truth and sense of its parts. From this analysis Wittgenstein indirectly draws us to the conclusion that the subject is something complex and not a soul, a common thesis in the philosophical tradition. Another point here is that Russell's theory does not make the judgment of nonsense impossible. It is instructive to note, as we did more systematically earlier in Chapter II, that the W-F Notation (nowadays called truth tables) also allows nonsenses in its construction, if one line is not to be mutilated ad hoc. The exclusion of one or more possible combinations of propositions, represented by the strike of one line from the truth table in order to avoid the emergence of nonsense, shows us that the logic cannot be purely combinatorial. The puzzle with colors and measurement arises mainly because what seem to be clearly reasonable assumptions of the attractive purity of logic very quickly lead one to confusion, embarrassment and problems with expressibility. A meaningful basis of elementary propositions and sound rules for combining them do not automatically guarantee the meaningfulness of any possible construction of complex propositions. Only when those allegedly innocent principles are challenged by paradox and deadlocks and come under a gaze guided by the realization of what will follow, can one really see the problems which lie latent within them. The difficulties in the application of logic shows us that something must have been wrong in tractarian logic or, rather, with its image of logic itself.

Assuming compositionalism, we understand that the semantics of complexes would be completely functional determined by the primitive components, which should touch the world through its names. The name, in turn, would be responsible for the connection between the language and the world, in such a way that the functional expressions would allow the composition and the generation of complexes through simple things. As we already saw, it seems natural to think that at some point language should touch reality to the determination of the propositional sense. As Porto argues in his paper about automorphism:

[&]quot;It comes from Frege the grandiose vision about the functionality of the language, facing it as a huge inductive structure where the semantic content of composites would be always functional determined through its components, until we arrive, through this

process of analysis, in the level where the simple names are. They are the original semantic provider to the whole structure. (Porto, 2005, p. 15).

In this functional paradigm we have an uniform propositional construction with a superior level, which permits the propositional truth-value be determined through its comparison with reality (even when the proposition is false, it would preserve its sense). And there is also an inferior level, responsible for the determination of sense through the denotation of its constituents. The saturation of names at the base of language determines the truth-conditions, but does not determine truth itself. Names are responsible for the connections of propositions with extra-linguistic elements. The predicates and functions would then be responsible for the intralinguistic connections.

"No extra element, foreign to the compositionalism, should intervene in the the task of the composite sense determination. Every sense component which could interfere in the determination of the truth should already be inductively embodied in the compositional structure itself". (Porto, p. 17)

In this way, for us to be loyal to the compositionalism, we should reduce all the contextual dependencies to the internal structure of a proposition. The sense should be clear in the compositional structure of what is presented by the propositions, the alleged objective content of our everyday sentences. Otherwise, it should be prospected, just as the passage 5.541 outlines a strategy to refute problems which are solely apparent. (Nails that are no nails, as our metaphor in the section 2.2. shows). After all, from this perspective, all the philosophical problems posed due to a misunderstanding of the logic of our language are nonsense, and they could be avoided if we could transparently understand the allegedly inner structure of propositions as thoughts or content always inevitably disguised by the current language.

However, we may note that many times the syntax of the ordinary sentences is too poor to carry out this ingenuous task. Most sentences do not survive even the most trivial tests. To test simple everyday English sentences such as "It rains today" should show us all parameters involved to assure its determined sense. We would need to put them through perspicuous analysis involving indexical variables of time and space, Ph indicators or analysis of the chemical composition of the rain water, and other numerous components. Here we have a kink in the classic problem of "hidden variables" or of "variable polyadicity", where because of our search for a more precise expressibility we would have an explosion of variables and parameters. For each new parameter, many other new ones emerge. It is interesting to note that this problem is common to many descriptive rubrics, such as models, maps, propositions, and any other representational means which are intended to have a radical fidelity to what they represent. It seems here that we necessarily always need a level of distortion in the representation. We need always, say, an idealization, a disguise or an abstraction of what is being represented to be able to represent anything at all. The question here can be if we could indeed find something beyond this disguise, just like the real form of a sentence.

In this way, the idea of a thought or proposition appears naturally: the need for something to be presented by a sentence, where all the relevant empirical information emerges, marked, clear and invariable in terms of time, space and other indexical references. This would compromise the multiplicity of the inferior propositional level with a stable and eternal net of possibilities and articulations. The result of such a demand is to make the analysis of the ordinary empirical propositions potentially infinite, in order to, for example, determine the time and space in detail, without ambiguities. As Porto clearly maintains when addressing the paradigmatic tractarian case:

"All these temporal, spatial and referential determinations should be absolute, *i.e.*, valid to the whole universe, from all points of eternity. Only in this way, with the universal and eternal fixation of the propositional contents, it would be completely avoided the appeals to external contextualization, *i.e.*, non compositional ones. (Porto, p. 22)

We have two problems here: the need for absolute determination – atemporal and neutral to intellectual debates or pragmatic demands of the semantic denotation of propositions _ and we would also have its internal infinite structure to compose all the infinitudes of aspects and determinations of this aspect in reality (such as time, colors, spatial coordination). As we already discussed, this makes the analysis of empirical propositions, *i.e.*, the application of logic, virtually impossible.

Furthermore, the predication does not only seem to be truth-functional. We need something more. When we say "rabbit is white" we are not saying "here rabbit and here white". We need a form of overlapping, of coincidence, and not

only a copula between the terms. This involvement or this sharing has to be somehow asymmetric; "rabbit" participates in "white", but not the inverse, because there are rabbits that are not white. How can we make predicates be reduced to points? How can we make an intensional approach meet the extensional? Hintikka & Hintikka believe that there is a tension in this point reaching through the whole tractarian Philosophy:

"Hier haben wir wirklich ein Beispiel vor uns für die im *Tractatus* bestehende Spannung zwischen Logik im gewöhnlichen Sinne (Bedingung der Tautologizität) und Wittgensteins Phänomeno-Logik, d.h. Die Vorstellung, dass alle logischen Formen aus den Formen der einfachen Gegenstände der Bekanntschaft geBildet sind." (Hintikka & Hintikka, p. 172)

I hold, however, that these are false questions to Wittgenstein's tractarian Philosophy. Here we can see again that a question can reveal both our assumptions and presuppositions and determines the scope and the nature of a proper answer. This happens clearly in the case of a notational system that determines in a great length the analysis result. Questioning how predicates can be dissolved in the truth-functional analysis recommended in *Tractatus*, is to bring to the analysis paradigm another paradigm – precisely that which the early Wittgenstein fought against. It is interesting to note that an analysis of propositions in terms of subjects and predicates determines an ontology of substances or objects and properties before it is determined by them, even if they are empirical. It is no accident that as a result this kind of analysis brings an ontology that more adequately meets our current intuitions about ontology, *i.e.*, that the world are composed ultimately by objects and its characteristics. As Cuter points out about the *Principia*:

"The confusion made by Russell in the *Principia* between signs and what these signs mean are proverbial. It is difficult to establish what he understands there by "propositional function", or even by "proposition". A word as "individual" seems to be largely associated to the ontological counterpart of names, which are at the base of this hierarchy, while "propositional function", "argument", and "proposition" seem to be set in the interior of the frontiers of the "sign system" that, following the *Tractatus*, can be described without problems." Cuter, 2009 A, p.54)⁶⁷.

⁶⁷ Wittgenstein affirms in the *Tractatus*: "In der logischen Syntax darf nie die Bedeutung eines Zeichens eine Rolle spielen, sie muss sich aufstellen lasse, ohne dass dabei von der Bedeutung eines Zeichens die Rede wäre, sie darf nur die Beschreibung der Ausdrücke voraussetzen. Von dieser Bemerkung sehen wir

The effort in *Tractatus* of searching for a profound logical form of sentences comes precisely from a distrust that the grammatical analysis paradigm, or even that the Russellian analysis for the existential case would meet the real logical form of the sentences. The ultimate ontology of the world could not be anticipated in this way. Indeed, Russell thinks of it as a kind of edifice organized hierarchically in infinite stocks: beginning with individuals or substances in a first stock and continuing with a hierarchy of properties and relations to be systematically ascribed to the edifice's lower stocks. In this way the possibility that functions could take themselves as arguments is artificially interdicted. As Cuter affirms:

"As can be seen here, Ockham's razor in the hands of Russell was transformed into a kind of magic wand. It is true that this *ad hoc* ontology (whose stated purpose was to immunize the *Principia* against paradoxes) followed the old maxim of banquets _ "it is better having more than having less." The system included all the expressive possibilities. The language would use those which would be necessary." (Cuter, 2009 A, p. 38)

It is important to highlight here that the disguise metaphor which was so remarkable in the tractarian period which appears clearly in 4.002 as well as in Some Remarks is also revised in § 93 of PB. Roughly presented, Wittgenstein suggested we think about two surfaces (A & B) which contain figures. The figures on surface A must have been reproduced on surface B by a method of projection. We can make the figures on the surface A easily recognizable through the figures on the surface B if we adopt a more reliable projective or figurative method, such as one of orthogonal projection. Nevertheless, if, for example the figure on surface B must be always shown as circles which are independent to the figures on the surface A (figures which could be circles or not) we could not *prima facie* see the correspondence between the figures of the two surfaces. To know that there is a correspondence and that on the surface B there are only, for example, circles, does not help us to understand how and which figures on surface A are indeed being represented on surface B. The natural interpretation of this example

in Russells "Theory of Types" hinüber: Der Irrtum Russells zeigen sich darin, dass er bei der Ausstellung der Zeichenregeln von der Bedeutung der Zeichen reden musste" 3.33 and 3.331

is presented by Wittgenstein when making the analogy to the language analysis context:

"So geht es mit der Wirklichkeit, wenn wir sie in Subjekt-Prädikatsätze abBilden. Dass wir Subjekt-Prädikatsätze gebrauchen, ist nur eine Angelegenheit unserer Zeichengebung. Die Subjekt-Prädikatsform ist an sich noch keine logische Form und sie ist Ausdrucksmittel unzähliger grundverschiedener logischer Formen, wie die Kreise auf der Ebene II. Sätze: "Der Teller ist rund", "der Mann ist groß", "der Fleck ist rot", haben in ihrer Form nichts Gemeinsames." (§93, PB, p.119) my italics

In this way, the paradigm of analysis of sentences in terms of subject and predicates makes sentences from complete different areas be analyzed in the same way. The important step here it to see that in the three examples given by Wittgenstein we have three different grammatical systems, which are analyzed in the same way through the suggested predicative or functional analysis. We then have the need to restrict the generality of our analytical means by coordinating them differently to different niches. This would be the mistake in the kind of functional analysis recommended by Frege. We may really accept that the analysis of sentences in terms of concepts and objects does not largely distinguish itself from the analysis in terms of predicates and subjects or that it even collapses with it, as Wittgenstein affirms in the same passage from PB:

It is thus clear that for Wittgenstein the functional analysis and the predicative analysis of our language are not to be easily distinguished. A further problem is the fact that there are analytical alternatives for the description of empirical environments that show us that analysis in terms of subject and predicate and its correspondent ontology in terms of objects and properties may be unnecessary (or even inadequate) in some distinct contexts. Wittgenstein shows this when highlighting the community and resemblances between the function analysis and the predicative one in the WWK:

[&]quot;Eine Schwierigkeit der Fregeschen Theorie ist die Allgemeinheit der Worte "Begriff" und "Gegenstand". Denn da man Tische und Töne und Schwingungen und Gedanken zählen kann, so ist es schwer, sie alle unter einen Hut zu bringen. Begriff und Gegenstand, das ist aber Prädikat und Subjekt. Und wir haben gerade gesagt, dass Subjekt-Prädikat nicht eine logische Form ist".

[&]quot;Wenn Frege und Russell von Gegenständen gesprochen haben, so hatten sie immer das im Auge, was sprachlich durch ein Substantiv wiedergegeben wird also sagen

wir die Körper wie Stühle und Tische. Die ganze Auffassung der Gegenstände hängt also aufs engste zusammen mit der Subjekt-Prädikat Form der Sätze. Es ist klar, wo es keine Subjekt-Prädikat Form gibt, da kann man auch in diesem Sinne nicht von Gegenständen sprechen. Nun kann ich das Zimmer auch ganz anders beschreiben, z.B., so: Ich beschreibe die Oberfläche des Zimmers analytisch durch eine Gleichung und gebe die Verteilung der Farben auf dieser Fläche an. Bei dieser Form der Beschreibung ist keine Rede mehr von einzelnen "Gegenständen", von Stühlen, Büchern, Tischen und ihrer räumlichen Stellung. Wir haben hier keine Relation, alles das gibt es nicht" (WWK, p. 42)

It seems highly unlikely to Wittgenstein that there is a progress between the Aristotelian analysis and the Fregean analysis of sentences. Wittgenstein's bet here is that the kind of analysis of sentences in terms of subjects or predicates and concepts or objects does not need to have (and probably does not have) any resemblance with the structure of the world or actual phenomena. This leads us to the third problem, which we can call: "the shot in the dark". This was already presented above in Hintikka & Hintikka's functional answer to the *Color Exclusion Problem*. Wittgenstein explicitly talks about this context in the WWK:

"Nun meine ich: Für das ganze Gebiet der Elementarsätze herrscht ein Grundsatz und der lautet: die Form der Elementarsätze lässt sich nicht vorhersehen. Es ist einfach lächerlich, wenn man glaubt, hier mit der gewöhnlichen Form der Umgangssprache, mit Subjekt-Prädikat, mit dualen Relationen und so weiter auszukommen. Schon das eine, dass im Elementarsatz die reelle Zahl oder etwas der reellen Zahl Ähnliches auftreten kann, beweist, wie völlig verschieden der Elementarsatz von allen übrigen Sätzen sein kann. Und was da noch alles auftreten kann, das können wir heute unmögliche voraussehen. Erst wenn wir die Phänomene logisch analysieren, wissen wir, welche Form die Elementarsätze haben. Hier ist ein Gebiet, wo es keine Hypothese gibt. Der logische Bau der Elementarsätze braucht nicht die geringste Ähnlichkeit zu haben mit dem logischen Bau der Sätze. (WWK, p.42)

Apart from the notion of real numbers emerging in elementary propositions which appears in 1929, by the time of the article *Some Remarks* the main intuition here is still tractarian: we do not know and we cannot know how the profound logical form of sentences really is. This can neither be properly revealed by the traditional grammatical analysis nor by the Russell-fregean analysis. There still must, however, be an elementary basis, what a truth-functional, neutral and combinatorial logic would show us. These propositions must be composed of names, which, in turn, must be interconnected like links in a chain, without any other intermediary elements or copulas. In this way, we can avoid the Russelian embarrassment with the indefinite multiplications of relations. To analyze a

sentence, when we need to postulate a relation which joints predicate and subject, we have also to postulate another relation to carry out this relation with the analyzed sentence and so on. The search for a phenomenological language in 1929 follows this tractarian idea, when it is intended to make the projected figures on the surface B more recognizable through a notation which could make the projection method more perspicuous and transparent for the exam. The notational means would still be the transparent instrument to grasp the figures on the surface A even though being distorted on the surface B.

While in the *Principia* this ontological organization of individuals and properties functions is a kind of silent assumption to the presentation of all names and functions and also of their combinations, we have in Wittgenstein's Philosophy the necessity of waiting for the end of the logical analysis, which is carried out by a notational system adequate for the grasping of the ultimate elements of the reality. Wittgenstein in *Tractatus* presupposes that the signs have denotation, while Russell presupposes the significance itself of these signs. Cuter makes clearer Wittgenstein's criticism on Russell's procedure:

"In the *Principia*, the discrimination of the name totality is a initial move of the analysis game. No meaning is given there. We have the impression that these meanings are given simply because we project on the hierarchy of types the notions of "subject" and "predicate" of the current language. We know that "Socrates" is not a name, in the logical sense of it, because it presents the same problems of a designatory expression as "The teacher of Plato". We also know that the "mortality" lacks an analysis in terms of "logic atoms" so much as the name "Socrates". Despite it, we deal with "Socrates is mortal" as analogous to propositions of the conceptual notation, such as "fa", for them we already do not have a final interpretation _ "fa" will be the ascription of a "property" to a "individual", in the same way in the former proposition we have the ascription of mortality to Socrates. We expect that a name as "a" names something partly analogous to "x is mortal" (or to the abstract noun "mortality"). It is just because of it that the syntax based on type theory makes sense and seems perfectly reasonable." (Cuter, 2009 A, p.57).

Clearly it seems that syntax like the one to be found in *Principia* presupposes an ontology which we commonly use in grammatical analysis. Nonetheless, this could not be anticipated or presupposed in this way. There is nothing to indicate that this would be a truly logical analysis. In order to formulate the rules of sign manipulation in a notational system, we do not have to deal with the reference of these signs, not before the analysis result.⁶⁸ Here we still have the

⁶⁸ Once again, we have difficulty in relation to Wittgenstein's Philosophy of Symbolism: a kind of circularity. Does the notation presuppose the results of complete analysis or does the complete analysis

programmatic flavor of the *Tractatus* in the direction of the task postponement: We try to define the end of the analysis in the more general way because the current language disguises or distorts systematically the logical form of the language. We then expect to later discover how we adequately reach this last intended point.

5.2.

Degrees of Exclusion and Systems of Propositions (Colors, Negations, Systems)

There are more logical oppositions and exclusions between empirical propositions than the logic of tautologies and contradictions from the *Tractatus* can express. This is the picture of logic that Wittgenstein thought since 1913 being definitive:

"Ich dasjenige, was ich in meinem letzten Brief über Logik schrieb, noch einmal in anderer Weise wiederholen: Alle Sätze der Logik sind Verallgemeinerungen von Tautologien und alle Verallgemeinerungen von Tautologien sind Sätze der Logik. Andere logische Sätze gibt es nicht. (*Dies halte ich für definitiv*)." Letter to Russell from the Norway, 1913 (*Tagebücher* 14-16 p. 127). my italics

By principle, this combinatorial, neutral, abstract logic – a hallmark of the *Tractatus* – cannot express or carry out all empirical propositions. Some exclusions are simply opaque to the tractarian instruments of analysis – instruments which, although very potent, are too abstract and not sensitive enough to express finer exclusions and implications. The tractarian logic cannot express the difference between contrary and contradictory propositions. The former cannot be reduced or analyzed in terms of contradictory propositions. The former are more refined, so to speak, because they represent an opposition in which two propositions cannot be true together although they can be false together. Not all exclusions are the kind of contradictions that can be well captured by the notation of truth tables. Some look extremely empirical. "Two things can not occupy the same point", or "at one point there can not be two things". The issue here seems to be only a matter of spatial restrictions and not of logic. Or in a taxonomic system, altogether contingent, if one affirms that an animal is a dog, it cannot be

presuppose a perspicuous notation. How can we talk about an adequate notation without knowing what awaits us at the end of the analysis? How can we have a complete analysis without a skilful instrument for the guidance of this task? It always seems that a notation is simultaneously both a criterion for and a result of a proper complete analysis.

(automatically, logically, or through necessity) a domestic cat, or a horse or human being... Similarly, if a point in the visual field is blue, it cannot automatically be red, green, yellow ... If the temperature today is 22 degrees, it is not and cannot be simultaneously 21°, 19° or 23°... And if a table is 3 meters long, it is not 4, 5 or even 2 meters long... And in a football match, if a team did not lose or tie, it must have won the match. This type of exclusion is internal to a category, to system of propositions, that is to an organized group by internal resemblance between its elements, which allows many alternatives and not just two in the case of the bipolarity. In most of the examples given above the use of reticence or three points precisely to a context of numerous, if not infinite alternatives, depending on in which system(s) we are operating or working with. For example, one can say: "That strange animal over there is indeed a praying mantis, so it cannot be a grasshopper." We can replace the latter creature with an ant, a spider, with some shellfish, with a frog, or even a with mammal. Regardless, we would have logical exclusions in accordance with the distance and resemblance between the species. We also have exclusions due to contrariety but with different gradations and strengths.

We also affirm the existence of an external kind of exclusion, when one element or more is excluded from a system for not belonging to it, as in with the combination of the numbers one, two, three, and a hexagon. This kind of categorical exclusion also allows for various - potentially infinite - degrees of strength as in (one, two, three, blue), or (one, two, three, lion) or (one, two, three, triangle). Using this heuristic suggestion of small artificial systems, we can clearly see that internal exclusions in a system apparently also admit many degrees of oppositions (green, orange, purple, giraffe). The "green" here seems to exclude "purple" more strongly than "orange", since green appears in the composition of orange. Here there is also the categorical exclusion between green and the giraffe. In the system (domestic cat, giraffe, lion, green), the element "domestic cat" seems to exclude "giraffe" more vehemently than it excludes "lion", apart from the categorical exclusion with "green". It should be noted that although "giraffe" excludes "green", these two elements can be assigned to the same object in the reality, but this does not happen with "giraffe" and "lion", nor with "green" and "purple".

In these simple and artificial systems we can clearly see that conceptual and logical organizations can be already very complex. It is doubtful that a purely combinatorial and neutral pattern of truth-functional analysis could capture this kind of subtlety of organization. In all these case, although elementary propositions make sense separately, the junction of these may not be allowed. As we have seen, the truth table notation, which incorporates the tractarian picture of logic, entails a procedure of symbolic expression which is tentatively neutral, complete, mechanical and combinatorial. However this is not suitable for capturing finer exclusions because some combinations should be a priori excluded. Some truth table lines have to be mutilated, in order to provide a correct representation of the possible articulations of the complex to be represented. No generalization of this mutilation of some lines for all systems is be expected. For example, depending on the kind of conjunction that we are using we could match blue and red obtaining purple, but not orange and purple. Or saying that "3" is "1 plus 1 plus 1" means not that this same "plus" can be read off in purple being somehow "red plus blue", maybe due to the same reason that white must not be either the addition of all colors. And what would mean "to match" a leopard with a lion? Maybe in the family of domestic cats there are some races that are "matches" of other two different races, but there can also be some that cannot be "matched". The meaningfulness of elementary propositions does not guarantee in all systems the meaningfulness of the complex propositions done by their articulations. As we have already seen, some have to be *ad hoc* forbidden in the former notation.

This kind of generous mosaic of internal or external exclusions within a system and between systems is not by any means necessarily homogenous or uniform. For example, in a system of oppositions of colors, green appears to exclude red more strongly than it excludes yellow. And, in a system of geometric figures, a triangle and a square have more in common with each other than with a sphere. Panthers and leopards are closer to each other than to domestic cats, despite all being felines, necessarily exclude others. If we could organize these degrees of strength on a scale of exclusion, we would be compelled to expect, to some extent, that there is a continuum of degrees of logical exclusions: since the most "pure" and radical logic exclusion, in a narrow sense, like the contradictory exclusions until more empirical exclusions, as in taxonomic systems which are

contingent, non-definitive and non-exhaustive, yet logical, because necessary. In a certain sense, logic should not only look at the empirical facts. Rather, logic should touch fact and even mix itself with it. This kind of exclusion by contrariety seems to throw logic into the empirical reality. We can, in principle, indefinitely extend a system of opposition or exclusions. This is the case with colors where we can "create" artificial colors which are not to be found in nature (colors such as cyan or magenta), though expected in the system of colors. It is also the case with numbers which we can extend by creating the concept of zero or real numbers, or in the case of new more precise systems for measuring gradations of empirical qualities, or in the case of new efforts in mapping new families of biological species from a newly discovered environment.

Of course if we do not want to repudiate the label of empirical propositions we have given these propositions, or deny that such exclusion is not logical in any sense, or affirm that these exclusions can be resolved or dissolved in terms of contradictions, we have to make logic look at the world, we have to make it interested in its conceptual or even in its empirical articulations, affinities and compatibilities. The bet here is that they are all logically articulated in systems of necessary implications and exclusions. It seems hard to deny that in systems that seem entirely empirical, ad hoc, non-exhaustive, contingent, there are exclusions or implications which are strictly logical, necessary, and automatic. If this point is red, it is not (and cannot be!) blue. If this animal is a lion, it is not (and can not be!) a leopard. If this book is on my desk, it is not (and can not be!) somewhere else. If now is 35°C in Rio de Janeiro, it means that it is not (and can not be!) 20°C in Rio (what it is a pity, when we are trying to do Philosophy). These examples follow other systems which seem more abstract or pure, examples where it looks more acceptable to hold these exclusions as logical. For example, when we hold that a shape is a triangle, we find that it is not a circle or a square or a hexagon...

Other examples may revolve around the transitivity relation among the natural numbers. This kind of consideration seems to get confused when we are dealing with, for example, the set of natural numbers. In a certain sense it is important to note that if we take a number, others seem to be excluded. If we take one in the sequence of natural numbers, we know that it is not two or three. This becomes clear if we use the numbers in a context of measurement, such as in terms of temperature, volume, length or width etc. If we take the addition as an

operation of this decomposition, it is not a truth-functional conjunction, because the occurrence plays an important role here, *i.e.* we know if we take the number 2, it can be decomposed in terms of two times 1. This can also be seen in the case of colors. The color green, strictly speaking, is not blue or yellow, but if we "add up" these two last colors, if we mix them up, we can make green. Color systems and numbers allow compositions that cannot be done with the traditional conjunction - a truth-functional apparatus that would only generate truth-functional exclusions or implications, without the sensitiveness for different system. However, adding up numbers does not mean mixing up colors. In order to understand the number 3, we have to be able to understand that 3 is analyzable into 1 and 2. While to understand white or to use properly the word "white" we do not have to know that this color is the sum of all others. So does "understanding white" mean understanding the presence of all colors, in the same way that understanding the number 3 means knowing how to join up three units? I think not. While we can indefinitely sum up units to arrive at a certain number, it is hard to believe that we can continuously add the same color to itself or even add different colors to each other ad infinitum. Moreover, what would be a unity of a color to be added up to another? A blue point in a visual context can be dark blue and in other context light blue, while the number two will always be a prime in any different context. To mix up colors does not mean adding up colors. "Orange" is not "green + red" as much as "3" is "2 +1". "Mixing up" yellow and blue by the truth-functional conjunction seems to be patently absurd, but somehow, "yellow + blue" seems to make sense in generating green. However, when we say "green" we often do not mean "yellow and blue", where "and" is a truth-functional copulation, and, in the strictest sense, not "yellow + blue." For we can make a darker green by adding more blue to the composition with yellow. While we can not make a stronger 3 by adding more 2 in a composition with 1. Another problem: Blue can be mixed up with red, and green can also be mixed with red. But the resultant colors, purple and orange respectively, cannot really be mixed up with another, although in a certain sense both come from red. Maybe the color system needs its own operator for composition, different from the conjunction of the propositional calculus and from the addition of natural numbers. As the truth-functional conjunction will not generate "mixture" in the case of colors or "addition" in the case of numbers, for this we would need other kind of "conjunctions"⁶⁹.

Accordingly, Wittgenstein points out clearly in the important § 83 of PB:

"Der Begriff des "Elementarsatzes" verliert jetzt überhaupt seine frühere Bedeutung. *Die Regeln über "und", "oder", "nicht" etc., die ich durch die W-F-Notation dargestellt habe, sind ein Teil der Grammatik über diese Wörter, aber nicht die ganze.* Der Begriff der unabhängigen Koordinaten der Beschreibung: Die Sätze, die z.B. durch "und" verbunden werden, sind nicht voneinander unabhängig, sondern sie Bilden ein Bild und lassen sich auf ihre Vereinbarkeit oder Unvereinbarkeit prüfen. (...)" my italics

We see here that logical operators have to be more sensitive even if we lose the truth-functionality. It seems we have the opportunity to postulate the existence of at least three different types of combination or conjunction: a summative one, which counts the occurrence, important to the mathematical context; a truthfunctional one, which does not count occurrence, important for propositional logic; and a "color" one, for expressing possible combinations as "green and yellow" or "red and blue" but not "purple and orange." In a certain sense, a point can indeed have two colors, depending on the colors that are to be mixed up there. For example, a shirt can be indeed red and blue, if here we are using the "and" to mean the mixing of colors in color system. This shirt would be indeed purple in this example. We could then even assume here that for each propositional system we may have a kind of "conjunction" to express its own possible and impossible logical links via its kinship. Or in other words, we would need a special sensitive conjunction for each system for capturing its logical multiplicity. I believe this is the logical intuition of the middle period of Wittgenstein's Philosophy, as § 83 points out.

It is hard to think of these propositions or this kind of exclusion present in propositional systems as stricly synthetic. The strict experience should not contain implications and exclusions. These would be already a step into the logic. As already shown, in one of the meetings of WWK, Schlick asks Wittgenstein, how one might replicate a Philosopher who assumes propositions of phenomenology (he has Husserl in mind here) that "a point of the visual field can not have two colors simultaneously", as synthetic *a priori* judgment. (WWK, p. 67) Wittgenstein argues that the plausibility of this judgment does not come from the

⁶⁹ It is worth noting that in nature we can not find, for example, zero or cyan or magenta. Although they are logically possible and they are foreseeable in the color system, they must somehow be created, as the work of Jaspers shows and tries to answer.

experience, that is, not from the fact that I have so far never seen an object that simultaneously has two colors. We certainly conceptualize this judgment with the strong modal "cannot". Wittgenstein says this "power" belongs to this judgment as a logical concept, a grammatical one. So he tries to reduce the idea of synthetic statement in this case to the absurd and the idea of synthetic judgments and *a priori* to wordplay of Husserl. In fact, it is as if we had only analytic and synthetic statements. In 5.551, Wittgenstein maintains:

"Unser Grundsatz ist, dass jede Frage, die sich überhaupt durch die Logik entscheiden lässt, sich ohne weiteres entscheiden lassen muss. (Und wenn wir in die Lage kommen, ein solches Problem durch Ansehen der Welt beantworten zu müssen, so zeigt dies, dass wir auf grundfalscher Fährte sind."

This principle proved to be wrong because it's misleading, as becomes evident in Wittgenstein's intermediate phase. If we really want to understand this kind of exclusion by contrariety, which _ finer than the one by contradiction _ is present in categorically organized systems, without detracting from its attribute of being logic, we have to either stretch up or abandon this principle. And this was what became clear to Wittgenstein with the *Color Exclusion Problem*. Indeed, he felt that we should take this wrong track. We should then adopt a more permissive view of logic, with more porous borders or no sharp borders demarcated between it and the empiric.

Logic does have to look at the world and cannot take care entirely of itself. It does have to take this "wrong track", as shown by the examples of systems above. And it does have to collide with its application (at least) in respect to the analysis of some empirical propositions which compose systems articulated in implications and exclusions. This is just the opposite of what is expressed in the famous passage 5.557: "Die Anwendung der Logik entscheidet darüber, welche Elementarsätze es gibt. Was in der Anwendung liegt, kann die Logik nicht vorausnehmen. Das ist klar: Die Logik darf mit ihrer Anwendung nicht kollidieren." It is interesting to think how far logic could really anticipate anything in reality, if indeed we have a continuum of degrees of strength of different exclusions. It should then have, so to speak, an *ad hoc* hypersensitivity in each propositional system to unravel its elements and its possible and impossible forms of articulation.

Interestingly, in the *Tractatus*, Wittgenstein often uses examples of colors to illustrate the fact of an object belonging to a logical space or to show what is logical at all, as in the illustration of an internal relation or property through the colors in 4.123:

"Eine Eigenschaft ist intern, wenn es undenkbar ist, dass ihr Gegenstand sie nicht besitzt. (Diese blaue Farbe und jene stehen in der internen Relation von heller und dunkler eo ipso. Es ist undenkbar, dass diese beiden Gegenstände nicht in dieser Relation stünden)".

His intention seems to illustrate what it meant to belong to a complete system, an exhaustive space of possibilities. The colors always appear in lower numbering in the *Tractatus*, that is, never in or near his knots. This reinforces the exegetical suggestion that the great work of Wittgenstein's youth really begins to collapse in its details, gradually consuming the base that supports the entire building. It is also clear that thinking about a color space as illustrative of logical features represents a revealing deviation, already within the tractarian conceptual geography, from the logical space as an absolute, eternal and exhaustive set of possibilities. When we think of a color space we do think of a set of rules for the articulation of simple elements, but we think of it as complete and more localized in a theoretical and practical context, and for no means, eternal.

The color system sets the exhaustive and normative horizon of legitimate combinatorial possibilities of a context, here where colors are relevant. It does not require much effort to see the image of a logical space in this daily and familiar context of colors, and it is precisely because of this natural suggestion that Wittgenstein seems to support the case of colors, as an illustration of what he thought was the absolute logical space. But the naturalness of this example was precisely the beginning of the end of the *Tractatus*. It is irrelevant at this point whether or not there is a grammatical system of colors or what the relationship between it and a "hyper-grammar" of all things (the logical space) may be. The choice of this example is already disastrous for tractarian claims. And as stated in § 83 of the PB as we shall see, if he had given more attention to this "naive and harmless" illustration of logic via colors, the problems with the tractarian project would have been predicted already by its writing. This beginning of deviation from the absolute logical space is clear in 2.0131 and this leads to the comment

2.013, which states that each thing should be in a space of combinatorial possibilities:

"Jedes Ding ist, gleichsam, in einem Raume möglicher Sachverhalt. Diesen Raum kann ich mir leer denken, nicht aber das Ding ohne den Raum. Der räumliche Gegenstand muss im unendlichen Raume liegen. (Der Raumpunkt ist eine Argumentstelle.) Der Fleck im Gesichtsfeld muss zwar nicht rot sein, aber eine Farbe muss er haben: er hat sozusagen den Farbenraum um sich. Der Ton muss *eine* Höhe haben, der Gegenstand des Tastsinnes *eine* Härte, usw."

It is remarkable that here Wittgenstein could already foresee all the exceptions in his model for truth-functional analysis that make the logical necessity coincide with tautologies and contradictions. That is why colors and gradations on a scale are logically arranged, but not as tautologies and contradictions. In addition there is the issue of spatial and functional metaphors appearing in italics in this passage: there is the example that shows that any given sound can only have one pitch. As there were no room for more than one. Another example shows that any tangible object can only have a single hardness. It is just like the spatial metaphors about the chair in Some Remarks (cf. p., eg., p.169.) Again, as there were no room for more than one value. Similarly, it show us that each coordinate allows only one argument. For example, in the color space, we have mutually exclusive propositions by contrariety, and in the field of lengths we have propositions that imply others, as in "the length of the table is 5 feet long", then "the length of the table is in the range of 3-6 feet long." I argue here, then, that in the very ontology of the Tractatus we could foresee the intractability and weaknesses of his image of logic, which are usually seen in 6.3751. And this fact is no way casual.

In PB § 83, Wittgenstein admits he could had seen this problem about colors and about more refined exclusions within systems already in the *Tractatus*. He does not mention the passage 2.0131, but it is highly probable that he has precisely this one in mind. The seed of the collapse of the logic of the *Tractatus* was already planted there, in its ontology, and this included showing the inadequacy of its notation which is linked directly to the Leibnizian spirit of this work:

[&]quot;Der Begriff des "Elementarsatzes" verliert jetzt überhaupt seine frühere Bedeutung. Die Regeln über "und", "oder", "nicht" etc., die ich durch die W-F-Notation

dargestellt habe, sind *ein* Teil der Grammatik über diese Wörter, aber nicht die *ganze*. Der Begriff der unabhängigen Koordinaten der Beschreibung: Die Sätze, die z.B. durch "und" verbunden werden, sind nicht voneinander unabhängig, sondern sie Bilden ein Bild, und lassen sich auf ihre Vereinbarkeit oder Unvereinbarkeit prüfen. In meiner alten Auffassung der Elementarsätze gab es keine Bestimmung des Wertes einer Koordinate; *obwohl meine Bemerkung, dass ein farbiger Körper in einem Farbenraum ist etc. mich direkt hätte dahin bringen können.* Eine Koordinate der Wirklichkeit darf nur einmal bestimmt werden. Wenn ich den allgemeinen Standpunkt darstellen wollte, würde ich sagen: "Man darf eben über eine Sache nicht einmal das eine und einmal das andere sagen" Diese Sache aber wäre die Koordinate, der ich einen Wert geben kann und nicht mehr." (p.111, my italics).

Here we have clearly a kind of *mea culpa*, articulated with problems with measurements and spatial intuitions, with the possibility of non-truth-functional operators and the limitations of expressibility of the tractarian notation. Therefore, the *Color Exclusion Problem* that is traditionally handled by the secondary literature in 6.3751 can already be seen when we conjugate this passage about the belonging of objects in a space of possibilities with the 2.061 passage, also from the ontological part, which says that states of affair must be independent of each other. Here it is not directly about a ban of the empirical-metaphysical form of "an object can not be in various states of affairs simultaneously", but *prima facie* a ban on logic, "an object must have a color, and only one, that is, if it is green, it cannot be red, blue... "If a tangible object must have a hardness, then other hardness values are excluded". "A musical note must have a pitch, so other pitches must be logically excluded". There is no room for another value.

It is remarkable that with these examples of the tractarian ontology we already have counterexamples to the thesis of the logic independence of elementary propositions (here, states of affairs). The *Color Exclusion Problem* is a logical problem that permeates the language and the ontology of the *Tractatus*. It is not, therefore, only one problem with the expressibility of exclusions by contrariety in terms of truth-functionality. When we consider this problem as logical, we easily pass to its ontological part or linguistic aspect. When we already see this problem in the tractarian ontology, we can notice that it is a more abstract, structural problem. How should we harmonize the requirement that to be a thing (*i.e.* a name or an object) is to belong to a structure of things (*i.e.* propositions or state of affairs) with the bet that these elementary structures must be logically independent, that is, they must not exclude or implicate each other? This shows that this tension should naturally culminate in the theses of Wittgenstein's middle

period, *i.e.*, these primitive structures (propositions, state of affairs) should no longer be independent, they should compose, then, systems of structures (systems of propositions, categories). And Logic should not anymore then take care of itself. Or better: to the question whether the logic could take care of itself, the answer should be a bold and straightforward: no.

We also have the enigmatic passage 2.0251 in the tractarian ontology that already seems to anticipate or evoke the phenomenological phase of Wittgenstein's middle period. This would make this turn from the logical point of view to a phenomenological one more understandable and justifiable, if indeed we consider that already in the *Tractatus Raum, Zeit und Farbe (Färbigkeit) Formen der Gegenstände sind*. Bento Neto acknowledges the problematic nature of this passage which has already condensed all the problems to be investigated because they represent the collision of the logic wiht its application: "(...) each of these three items represents what we call a collision between the logic and its application _ precisely what, according to the *Tractatus*, could not occur". (Bento Neto, p.51.) If, in order to understand something, we must be able to understand the logical complexity, or category or system, to which it belongs and how these are organized, and we need to keep in mind that the complexity of an object appears to have to do with time, space and color, we have to take into account its phenomenological complexion that defines its combinatorial possibilities.

It is also interesting to wonder why Wittgenstein does not try to reduce the colors to other categories of time and space as has traditionally been done. These two categories allow us to build up a perspective of an organized sensorial world: we come to understand that "two objects cannot occupy the same place simultaneously", and "an object cannot simultaneously be in two different places". With the colors we are given entry into this kind of exclusions or implications of systems and structures in the tractarian ontology and logic (if we do not have already this kind of exclusion in temporal and spatial domains!).

In other words, any proposition about ascription of colors to an element of the visual field or in a context of measurement, or even in a taxonomic context, does depend on the assumption of a non-truth-functional system, independent of other systems or not. A color never to some extent appears alone, just as well as a degree always appears in a scale. In addition, this also arises when we have a classification system with exclusive components, as in the case of an animal in a taxonomic system. At least, in these domains, we need a contrast to a multitude. If we expand this viewpoint more generously, I believe we will see a corollary of this discussion: There is no object without a logical space, because there is no object without a system, to which this object belongs. A organized system of kinship, resemblance, with implications and exclusions with all sort of strengths within. In other words, there is no understanding of something without understanding its somehow exhaustive combinatorial horizon with other objects. I believe that this holistic approach can easily be extended (at least in Wittgenstein's middle period) to basically cover all phenomena of our experience and all propositions of our language.

The radicalization of stretching up the thesis of holistic semantics of the *Tractatus* clearly formulated in 3.42 would resolve this tension between the necessity of insertion of an object into a system in order to understand it and the demand that these complexes are all independent of each other. We can indeed antecipate the holism of the middle period as a natural consequence of some passages of the *Tractatus*. The passage 3.42 has to receive in this point the leadership in our investigation:

"Obwohl der Satz nur einen Ort des logischen Raumes bestimmen darf, so muss doch durch ihn schon der ganze logische Raum gegeben sein. (Sonst würden durch die Verneinung, die logische Summe, das logische Produkt, etc. immer neue Elemente _ in Koordination _ eingeführt.) (Das logische Gerüst um das Bild herum bestimmt den logischen Raum. *Der Satz durchgreift den ganzen logischen Raum*.) my italics

This strategy to solve the tension from the 3.42 does not come without prejudice towards the thesis of logical independence of primitive structures, such as elementary propositions or states of affairs. Consequently, to understand a proposition always means to be able to send it to the area of combinatorial possibilities to which it belongs, because understanding a proposition also involves understanding its negation as that is always syntactically expected. The negation is a syntactical device that bring us a semantic universe. The conjunction of a proposition with other propositions must also be provided for therein, as well as its implication, disjunction, etc. Logical operators do not add a logical multiplicity to a proposition, that is, we continue to understand the very same fact that it is represented by a proposition before we conjugate this proposition with others through truth-functional operators. In the case of colors, it is obvious that to

understand that something is red, is to be able to understand "not red". This means, in turn, to understand that "it is blue or yellow or green etc". Negation is interestingly a syntactic device that automatically carries with it a complex semantic system, at least in the case of colors and measures. A naive syntactical procedure, such as the negation, brings, with its possibility, largely complex semantic assumptions.

I would say the tractarian logical space - absolute, sovereign, eternal, exhaustive - unfolds itself naturally, from the failure of the omnipotence of truth-functional analysis, in a plurality of propositional systems. These also define, as the logical space, the horizon of articulations of elements in a category. Systems, regardless of being competitors to each other, interactive or not, more contingent and empirical, have to be, in some same, always complete. They have to be exhaustive or closed in terms of their possibilities, in order to prohibit creations or surprises within them. The absolute logical space breaks up into contingent logical spaces, but in a logical and exhaustive category. We can defend here the fragmentation of the logical space by the *Color Exclusion Problem*.

The investigation of these "fragmentary" logical spaces, complete in themselves, in the middle period, is a grammatical investigation. In this way, Philosophy could start anywhere and at any time to engage itself with the clarification of the usages in the current language and of the problems that arise from their distortion. (We should then move ourselves in the grammar of current language and not any more search for a hidden logical form). We can rely then there is a conceptual shift from a single logical syntax to several independent logical grammars that naturally accompany the withdrawal of a purely truthfunctional logical analysis of empirical propositions towards a description of phenomenal complexity in our sensory space. This procedure would be more sensitive to the correct expression of the multiplicity of certain systems, especially those involving measurement, where real numbers are needed.

The logical grammar from this middle period, as well as the tractarian logical space, provides spaces of combinatorial determination of the horizon of components of a system. They should therefore be somewhat closed and complete. This largely explains the adoption of the terminology of a primary language or phenomenological in this period. In the *Tractatus* this was the ground of language, when this touched the reality and the secondary language,

physicalistic, of our ordinary propositions and current language. The challenge of this period, as in the *Tractatus*, was trying to make the second, through a tortuous way of analysis, find the first in its logical splendor and transparency.

In a way we can see how much of programmatic the *Tractatus* has when it proposes a way to carry out a complete analysis of empirical propositions in terms of elementary propositions, through the search for a perspicuous notation. As we have seen, when there is no longer an idea of complete analysis, the search for a suitable notation shall also expire. The rescue attempt of the *Tractatus* as a project occurs when Wittgenstein abandons the notion of independent elementary propositions in 1929, and takes the notion of systems of propositions following the tractarian appeal of dissolving philosophical problems through the investigation of language's profound and hidden syntax.

On January 2, 1930, Waissman makes notes on the *Elementarsätze* – observations that are clearly on par with the 1929 article:

In this context, I would even risk saying that taking a look into the propositions resembles the tragic hero Perseus' glance at the mythological Medusa. This closer look has just terminally paralyzed all the machinery thought in the *Tractatus*, bringing it to its own end. Being part of a broader syntax not only brought new complexity to the challenge of complete analysis, it has also shown

[&]quot;Ich möchte meine Auffassung von den Elementarsätzen erklären und möchte zuerst sagen, was ich früher geglaubt habe und was mir jetzt davon richtig scheint. Ich hatte früher zwei Vorstellungen vom Elementarsatz, von welchen mir die eine richtig zu sein scheint, wogegen ich mich in der zweiten vollkommen geirrt habe. Meine erste Annahme war die, dass wir bei der Analyse der Sätze schließlich auf Sätze kommen müssen, die eine unmittelbare Verbindung von Gegenständen sind, ohne Zuhilfenahme logischer Konstanten, denn "nicht", "und", "oder" und "wenn" verbinden die Gegenstände sind. Daran halte ich auch jetzt fest. Zweitens hatte ich die Vorstellung, dass die Elementarsätze unabhängig voneinander sein müssten. Die vollständige Weltbeschreibung wäre gleichsam ein Produkt von Elementarsätzen, die teils positiv, teils negativ sind. Hierin habe ich mich geirrt und zwar ist folgendes daran falsch: Ich hatte Regeln für den syntaktischen Gebrauch der logischen Konstanten aufgestellt, zum Beispiel "p.q", und hatte nicht daran gedacht, dass diese Regeln etwas zu tun haben könnten mit der inneren Struktur der Sätze. Falsch war an meiner Auffassung, dass ich glaubte, dass sich die Syntax der logischen Konstanten aufstellen lasse, ohne auf den inneren Zusammenhang der Sätze zu achten. So verhält es sich nicht. Ich kann z.B. nicht sagen. An einem und demselben Punkt ist rot und blau zugleich. Hier ist das logische Produkt unvollziehbar. Die Regeln für die logischen Konstanten Bilden vielmehr nur einen Teil einer umfassendes Syntax, von der ich damals noch nichts wusste." (p. 73.74 WWK) (my italics)

that this idea could not be carried out. Still in WWK, there is also the explicit idea (or hope) of harmonizing this new theory of non-logical independence of elementary propositions with old tractarian theses:

"(...) Die Beschreibung muss immer so vor sich gehen, dass die Beschreibung nicht zweimal die gleiche Koordinate bestimmt. Um das zu verhüten, brauchen wir eine Syntax. Wir kommen auch ohne Syntax aus, wenn wir von vornherein ein System der Beschreibung benutzen, das der Wirklichkeit nicht zwei verschiedene Koordinaten-Werte geben kann. (...) Dort, wo aber die Sätze unabhängig sind, bleibt alles in Kraft: also die ganze Theorie des Schließens und so weiter. (WWK, p.76)

These steps advance the discussion about the role of the grammar in containing the metaphysical appeals and restoring the healthy use of language. The coup de grace against the *Tractatus* comes, then, with the very abandonment of the notion of complete logical analysis of propositions, conducted about two years later, in December 1931. We can see how the *Tractatus* is, in a way, the radicalization of the Russellian idea (itself clearly influenced by Fregean logicism) that the common grammar deceives us. So it is natural to think that we should seek, through the development of a perspicuous notational system, a hidden syntactic ground that sustains the whole language. Just like one might searching for music among disagreeable noisy sounds or seek gold hidden among several formless stones. Wittgenstein later confesses that this indefinite delay or postponing in responding is at the very heart of the tractarian dogmatism. The real turning point here is to deny this very idea. The current language does not deceive us. It is all we have.

"An einer dogmatischen Darstellung kann man erstens aussetzen, dass sie gewissermaßen arrogant ist. Aber das ist noch nicht das Schlimmste. Viel gefährlicher ist ein anderer Irrtum, der auch mein ganzes Buch durchzieht, das ist die Auffassung, als gäbe es Fragen, auf die man später einmal eine Antwort finden werde. Man hat das Resultat zwar nicht, denkt aber, dass man den Weg habe, auf dem man es finden werde. (...) (WWK. p.183)

It is important to highlight this last passage. By the time of the tractarian project, we have the path (a perspicuous notation), but not yet the result (the ultimate logical base of our language). This general picture illustrates the image of a logical exploration, an image of a prospective logic _ defended since the introduction of this thesis. The investigation of language in Wittgenstein's middle period for its sanitation against metaphysics not only involves a systematical

doubt or disbelief in relation to the common grammar, but also the very idea of another grammar. Such a grammar would be alike to the tractarian logical space, but not absolute or essential anymore, thereby defining the horizon of possible legitimate uses of linguistic expressions.

The idea of Philosophy as an abuse or distortion of language continues in the idea of dissolving its confusions by understanding their common origin. What changes here is the strategy: there is no longer any conflict between metaphysics with metaphysics, even though the latter is shown silently, as in the *Tractatus*. In this way, the requirement for the non-existence of the mystery is radicalized. This threat is still found in the *Tractatus* in the idea of the no transparency or the incapability in anticipating the form of elementary propositions. The problems of Philosophy are no longer dissolved by an investigation of the hidden essence of language through a perspicuous notation, but by the inquiry of our explicit language uses through the grammar of our propositional systems. There is no room anymore for the postponement of tasks – the natural result of the searching for something meant to be hidden. There was something wrong with the tradition of Frege, Russell, Ramsey, and Carnap about logical analysis, or even with the expectation of a complete analysis of language in tractarian terms.

Kienzler seems to agree with my interpretation:

"Die Aufgabe des Philosophen ist es demnach also nicht mehr, irgendwelche Behauptungen über die Welt oder die Sprache aufzustellen, die das Wesen der Welt oder der Sprache angehen. Ebensowenig soll er Vorarbeiten zu einer idealen Sprache leisten, die in Zukunft logische Fehler ausschließen wird, sondern er soll lediglich die Grammatik der bestehenden, gewöhnlichen Sprache beschrieben und darin auf wesentliche Unterschiede aufmerksam machen, wo diese im konkreten erläutert sein geändertes Verfahren an den Beispielen des Elementarsatzes, der Negation, der Verifikation, am ausführlichsten aber an der These des *Tractatus*, die den Satz ein Bild nennt." (Kienzler, p.30)

The death of the project of complete analysis of the language, whether logical or phenomenological, represents the final abandonment of the *Tractatus*, as Wittgenstein himself writes in WWK. I subsequently hold up the passage from 9th December 1931, as the epitaph of the *Tractatus*:

"Die falsche Auffassung, gegen die ich mich in diesem Zusammenhang kehren möchte ist die, dass, wir auf etwas kommen könnten, was wir heute noch sehen, dass wir etwas ganz neues finden können. Das ist ein Irrtum. In Wahrheit haben wir schon alles, und zwar gegenwärtig, wir brauchen auf nichts zu warten. Wir bewegen uns im Bereich der Grammatik unserer gewöhnlichen Sprache, und diese Grammatik ist schon da. Wir haben also schon alles und brauchen nicht erst auf die Zukunft zu warten (...) so verhält es sich überhaupt in der Grammatik. Wir können nichts anderes tun, als Regeln tabulieren. Habe ich etwa durch Befragen festgestellt, dass der andere für ein Wort bald diese, bald jene Regeln anerkennt, so sage ich ihm: Dann musst du also genau unterscheiden, wie du es gebrauchst, und mehr habe ich nicht sagen wollen. (...) Ich sah aus der Ferne etwas in sehr unbestimmter Weise und wollte möglichst viel heraussaugen. Aber ein zweiter Aufguss solcher Thesen hat keine Berechtigung mehr (...) Ich mache also den andern nur darauf aufmerksam, was er eigentlich tut, und enthalte mich einer jeden Behauptung. Alles muss sich dann in der Grammatik abspielen." (WWK, p. 183-6).

5.3 Holism

As discussed in chapter 4, about the *Bildkonzeption* and the isomorphism, our questions do determine our possible answers. An illegitimate question can also contaminate its answer, leading to conceptual distortions and exegetical aberrations. The question about the mirroring between the world and the language in this tractarian phase, leads us to accept that we are dealing with two separate structures with different ontological status. These distinct structures should somehow communicate or corresponds to each other for our propositions convey sense. This seems to justify the discourse on "Essential Harmony", isomorphism, and about a mirroring between world and language. For that we make the world and language two ontologically distinct islands in a logical sea of reality. The following is an example of this approach:

"Die Logik als Subjekt und der Spiegel ist das, was gemeinsam für die Welt und die Sprache ist _ ihre "kategoriale Zustimmung" _ die Harmonie. Die Harmonie ist wiederum der Isomorphismus der Strukturen _ Dasselbe, anwesend in Welt und Sprache. Dasselbe ist nichts anderes als die Form der Wirklichkeit." (Heflik, p.127)

This kind of interpretation seems erroneously or artificially to take the language out of the world, since propositions are also facts and are as much in the world as other facts⁷⁰. This interpretation makes reality be, in some sense, greater than the world, which is unnecessary and misleading, when we consider properly the tractarian ontology. In 1.11 we know that the world is the totality of facts and a fact is what the situation: a fact is the actuality of a state of affairs (2). So the

⁷⁰ My interpretation here follows the argumentation from the seminal paper of Ingolf Max, presented in the Kirchberger Kongress, 2011. For the full reference, see the Literature in the end of this thesis.

world is the totality of existing states of affairs, *i.e.*, positive or actual ones, and this follows on from our intuitions about the Wirklichkeit. However, the complication begins in 2.06. This passage seems to lead us to a compulsory separation between the world and the reality. Wittgenstein affirms there: "Die Wirklichkeit ist das Bestehen und Nichtbestehen von Sachverhalten". There it appears to be that reality seems to be enormously greater than the world, because it is comprised of some foreign elements, including negative ones and negative facts. But, as Demos argues in his article, nobody ever comes in contact with negative elements. In 2.063, Wittgenstein himself lays the ground for the confusion by stating that reality (plus "complete", "vollständig") is the world. The natural question here is: how can the two concepts be identified if we accept that reality is much greater than the world, because it contains negative facts or complexes that are not actualized? The easy way out here is to think that we are dealing with a conceptual mistake of Wittgenstein, and we are then allowed to correct his text. That is, we would show that there are indeed things beyond the world, namely negative facts that are added to this greater reality. In this way, we "demonstrate" that any identification between reality and the world would make no sense. Once we let reality already be larger than the world we can still insert into its complement the language, which, with its propositions, must somehow map the world. The world and language would belong to reality or to the logical space. As a result, we would have this common "soil" to be filled by a bridge between these two large and distinct structures. As we said earlier, this, therefore, seems to justify the notions of harmony, mirroring and isomorphism. However, if we use the passage 1.12 (still from the ontological part of $Tractatus^{71}$) we would have a more elegant way out to this issue, without needing to rewrite or to correct the Wittgensteinian text. Rather, we can justify the interdiction of meta-language in the Philosophy of Wittgenstein's youth: "die Gesamtheit der Tatsachen bestimmt, was der Fall ist und auch, was alles nicht der Fall ist". From this passage, the suggestion, or even the need for a holism in the exegesis of the Tractatus, is already clear. There is no outside of the world. There is nothing but facts. We cannot leave the world in order to speak about it. We cannot leave

⁷¹ It is interesting to note that the *Tractatus* can be fully understood already from its ontology. And this is not an accident by its writing, as we investigate here. We must then take this part of his youth work more seriously.

language to talk about it. If we take the world as a whole, as the totality of facts, we have, from this, how to know if a particular configuration of things, expected, possible and relative to the whole, does not appear in the world. Therefore we must take the need to grasp the world and its facts in its entirety seriously, and not approach it in a topical or localized manner.

In this way, the world as a *totality* shows internally, without the need of leaving it, all that which _ although not realized within it _could exist. And, although this understanding may be somewhat crude or rough, it is not derived from existent negative facts. Interpretations which deal with these strange negative entities are not necessary in the Tractatus. From the notion of totality we can know what the possible states of affairs are, even if they have not yet be actualized. We cannot leave the world and examine it from the outside in order to know which facts are positive and which are negative. But, from knowing what all the facts are, we can derive or determine which facts are to be expected although they have yet not be realized. We "see" the total reality from the facts of the world. The facts of the world, all of them, show us what it is not actualized. It makes no sense to require, therefore, that reality is greater than the world or that the former is greater than the latter in any sense, or that there is a mysterious structure outside the world called language that is essentially and harmonically related to it. Reality, world and language are one in the *Tractatus*: a complex of facts, a limited totality.

The identity between reality and the world is the critical exegetical step to understanding the relationship between "logic and the world" and "the language and the world" in the tractarian period. In a word: a relation of identity, not of harmony. From the world, from the constitution of the facts, we can see the total reality, the logic, the combinatorial horizon of things and thus also the legitimately configured language. This justifies the radicalism of the *Tractatus* by orientating itself internally towards the world in search for the limits of expressibility. This limit has to be drawn from within language, that is, inside the world and its facts, which is in a certain sense trivial. The world of facts determines logic in a way that its components exhaustively determine all possible combinations. Language covers the world, to the extent that we can only convey meaning and senses when referring it to and among ontological complexes, from one fact to another. Thus, it is evident that language cannot extrapolate the world leaving the facts behind, because language is made up of those very same facts. Here we have a certain air of triviality: one cannot express non-facts through facts, or facts through non-facts. This "representation" would lack, among other things, multiplicity, projection and coordination between its elements.

Understanding the world as a limited whole that internally determines combinations of the absolute logical space means to have the experience (to some extent, logical or syntactic) of what (was) that covers the sphere of the determination of meaning, while the experience of how (wie) indicates only the truth or the current constitution of the facts to us. Just as Wittgenstein affirms in 5.552:

"Die "Erfahrung, die wir zum Verstehen der Logik brauchen, ist nicht die, dass sich etwas so und so verhält, sondern, dass etwas ist: aber das ist eben keine Erfahrung. Die Logik ist vor jeder Erfahrung ____ dass etwas so ist. Sie ist vor dem Wie, nicht vor dem Was."

Understanding the movement of "seeing" the reality from the world of facts is the holistic movement - is the mystical movement itself. "Seeing" from the world of facts, a comprehensive, complete, absolute logical space is the mystical experience itself. The transition from a contingent actuality to the grasp of eternal possibility. Clearly what is outside of the world, whatever it is, must be ineffable, because it will be automatically outside of language. We cannot send facts to something, whatever it is, which is different from facts. "Die Logik handelt von jeder Möglichkeit und alle Möglichkeiten sind ihre Tatsachen" (2.0121). It is not up to logic to decide what is in the world or what is not, but logic should determine what can and what cannot be articulated. The accent should be here in the modality: possibility and actuality. Moreover, we have to be able to read off the possibilities from the actualities. We have to be able to recognize a possibility through a actuality. This is the mystical movement. This recognition throw automatically this actuality in a logical space. A good (mystical) strategy here would be the negation of a state of affairs, as 3.42 shows.

There is an interesting movement in Wittgensteinian philosophy, I would say, a contrary to the classical search for the truth. His philosophy, from the tractarian period onwards, is a search for the possible. In this context, at its core 3.3421 reveals a kind of strategy for a Mystic disguised as Philosopher, based on this movement from the actuality to its possibility: "(...) Eine besondere Beizeichnungsweise mag unwichtig sein, aber wichtig ist es immer, dass diese eine mögliche Beziehungsweise ist. Und so verhält es sich in der Philosophie überhaupt: Das Einzelne erweist sich immer wieder als unwichtig, aber die Möglichkeit jedes Einzelnen gibt uns einen Aufschluss über das Wesen der Welt. (...)"

The logic for the *Tractatus* does not lurk over the world from outside; it does not examine it from outside. It "sees" the possible relations of the things internally to the world, by understanding how its facts fit together. These possibilities clearly "reappear" in the language, not because it is harmonious to the world, but because it is also made up by the possible combinations of the same facts and because it is in the same way within the same logical space. The logic in this conception is not a third thing outside the language and the world, responsible for the connection between both, or the organization of both.

Here we can understand the extent to which logic can be held as normative. Clearly, this is not about saying that logic is normative because it contains requirements, prohibitions or authorizations about how to proceed in case of valid inferences, for example. And it is not normative in the sense of functioning as an abstract ideal of validity and exactness to be reached in order to think correctly. It is normative in the sense that it is also an internal criterion that governs the way we reason or describe the facts in the world and relations. It is not like the laws of nature or of thought, but a constituent of any relationship or articulation in the world of facts, whether ontological or linguistic, natural or artificial. Nor is the point to think logic like a super-science or a meta-universal science that could somehow provide the correct thinking across human life so that our language might be more accurate. Deviations of logic are impossible, not because they are not authorized or permitted. These alleged deviations are impossible to be thought of or to be actualized in the world because they exceed the bounds of logical space, or of the combinatorial horizon of things, whether ontological or linguistic. An articulation or illogical complexity is trivially impossible, not prohibited. It makes no sense to ban or to prohibit something impossible to be actualized, said or even thought.

This holistic view is in line with Hintikka's reading of the *Tractatus*, based on the distinction made in 1967 by Van Heijenoort, between "Logic as Language" and "Logic as Calculus." In 1979, Hintikka makes this distinction more comprehensive by applying it to a general understanding of different

philosophers' perspectives toward language in twentieth-century analytical tradition, namely: language, as universal medium or as calculation. The first perspective of language as a universal means makes semantics ineffable, because nothing outside the system could be said or even require saying. Of course, from this perspective, as a universal medium language cannot stand outside itself and describe itself. And Hintikka & Hintikka clarify this:

"Während man sonstige Dinge mit Hilfe der Sprache angeben, nennen, schildern, erörtern und theoretisch besprechen kann, ist es nach der ersten dieser beiden Auffassungen ausgeschlossen, die eigenen Sprache gleichsam von außen zu betrachten und zu beschreiben. Begründet wir diese Unmöglichkeitsthese damit, dass man die Sprache nur dann zu Aussagen über etwas verwenden könne, wenn man sich auf eine bestimmte feststehende Interpretation zu stützen vermag: auf ein gegebenes Netz von Bedeutungsbeziehungen zwischen Sprache und Welt. Daher könne man in der Sprache nicht sinnvoll angeben, welches dieses Bedeutungsbeziehungen sind, denn bei jedem derartigen Versuch müsse man sie schon voraussetzen." (Hintikka & Hintikka, p.15)

Hintikka & Hintikka, however, do not lead this distinction to its ultimate consequences in their interpretation of the *Tractatus* because they still propose the categorical distinction between language and world. Rather, they postulate the metaphysically generous thesis towards an eternal and harmonious connection between these two spheres.

"Nach der Auffassung der Sprache als universelles Medium lässt sich insbesondere nicht ausdrücken, was der Fall wäre, wenn die semantischen Beziehungen zwischen Sprache und Welt von den gegebenen verschieden wären. Mit anderen Worten, die Darstellungsbeziehungen zwischen unseren Ausdrücken einerseits und der Wirklichkeit andererseits können nach dieser Auffassung unmöglich variiert werden" (Hintikka & Hintikka) p. 16

Here again we have the interesting case of a correct result drawn from a wrong assumption. The language would be unique, without competitors because we cannot think of anything that lies beyond or out of it. In order to do so we must have already assumed the very same language. If there is an outside of language it cannot be described from either from outside nor from inside. The unity of language is reflected in the univocity of the logical space and the univocity of the world. Rather, there are no alternatives to the world or to language, just as there is no alternative to the logical space. We can not think of such alternatives, because we should be able to contemplate them externally to the logical space, which makes no sense. This is not because the relationship between language and the

world is eternal and invariable, but because the two are the same, as we already saw. As Wittgenstein points out: "Um die logische Form darstellen zu können, müssten wir uns mit dem Satze außerhalb der Logik aufstellen können, das heißt außerhalb der Welt." 4.12.

We could not leave the language to talk about it as Russell seems to propose with the suggestion of meta-language in his introduction to the *Tractatus* – a concept unacceptable to Wittgenstein. The communication between the world and language does not come from the kind of communication only probable or plausible between two distinct structures because they have been organized in the same way by a same agent or through common criteria. Logic has shown itself through the possibility of articulation of the facts. It should come with the facts, so to speak. Logic is already in the facts, facts that exhaustively compose the same language and the same world. Just as the reality is already in the world or the logical space is already in the elementary propositions, or (as we already seen in the chapter III that the pictorial relation is already in the fact):

"Zum Satz gehört alles, was zur Projektion gehört; aber nicht das Projektierten, aber nicht dieses selbst. Im Satz ist also sein Sinn noch nicht enthalten, wohl aber die Möglichkeit ihn auszudrücken. ("Der Inhalt des Satzes" heißt der Inhalt des sinnvollen Satzes.) Im Satz ist die Form seines Sinnes enthalten, aber nicht dessen Inhalt." (3.13).

For example, to linguistic theories is important that we do not have a theory about the whole. They need, so to say, an outside. They pressupose a way of peeking structures independently of each other, to compare one with another. In the *Tractatus* we do not have this possibility of an external perspective. There is no outside of the world and its internal relations, just as there is no outside of the language and its internal relations, and as there is no outside the logical space and its internal relations. We have then, already in the *Tractatus*, a requirement of an overall consideration, and not a local one, of the language and the world. As Wittgenstein states in 5.61:

[&]quot;Die Logik erfüllt die Welt, die Grenzen der Welt sind auch ihre Grenzen. Wir können also in der Logik nicht sagen: Das und das gibt es in der Welt, jenes nicht. Das würde nämlich scheinbar voraussetzen, dass wir gewisse Möglichkeiten ausschließen, und dies kann nicht der Fall sein, da sonst die Logik über die Grenzen der Welt, hinaus müsste; wenn sie nämlich diese Grenzen auch von er anderen Seite betrachten könnte. Was wir nicht denken können, das können wir nicht denken, wir können also auch nicht sagen, was wir nicht denken können."

A global consideration accurately follows the notion of a limited, but complete totality. This idea was important in early Wittgenstein's vision of logic, of language, of world, of Mystik. In WWK, we find something similar when he discusses about the nature of systems and their difference to empirical totalities, via the characteristic of completeness or closure:

Here we see the extent to which surprises or discoveries in logic were not to be accepted. This is a hallmark of the tractarian project which extends itself until the middle period, remaining consistent throughout the tractarian analysis project. To understand an individual, we have to bring it to the whole or to the system to which this individual necessarily belongs. This prevents surprises regarding possible connections between this singular and other singulars. This interpretation also justifies the impossibility of naive changes in notational device and some criticisms on Russell's and Whitehead's *Principia*. That's why Wittgenstein affirms in the *Tractatus*:

"Die Einführung eines neuen Behelfes in den Symbolismus der Logik muss immer ein folgenschweres Ereignis sein. Kein neuer Behelf darf in die Logik _ sozusagen, mit ganz unschuldiger Miene _ in Klammern oder unter dem Striche eingeführt werden. (So kommen in den "Principia Mathematica" von Russell und Whitehead Definitionen und Grundgesetze in Worten vor. Warum hier plötzlich Worte? Dies bedürfte einer Rechtfertigung. Sie fehlt und muss fehlen, da das Vorgehen tatsächlich unerlaubt ist). Hat sich aber die Einführung eines neuen Behelfes an einer Stelle als nötig erwiesen, so muss man sich nun sofort fragen: Wo muss dieser Behelf nun immer angewandt werden? Seine Stellung in der Logik muss nun erklärt werden" 5.452

We then also have the justification for Wittgenstein's position against the dogmatism at the end of the middle period: in the field of logic we do not need to postpone anything, when we move in a system we already have, so to say, everything that we need to investigate the language and to avoid metaphysical issues. In such a way there also could not be any puzzles or open questions. It is enough to analyze the system where these questions arise: if the question is internal to a system we can easily answer it by inspection of its elements, its

[&]quot;Auch wenn es in unserer Welt keine Klasse von der oder jener Anzahl geben sollte, so hat es doch Sinn, solche Klassen zu betrachten. Wir dürfen keine Möglichkeit von vornherein ausschließen, dies aber geschieht, wenn man mit Russell die Zahlen als Klassen tatsächlicher Eigenschaften definiert." p.214

grammar, its syntax, that is, its logic. This is already a natural development of tractarian ideas: "Unser Grundsatz ist, dass jede Frage, die sich überhaupt durch die Logik entscheiden lässt, sich ohne weiteres entscheiden lassen muss. (...)" 5.551. We can here exclude the parenthesis of this passage that comes to complete it, and addresses a perhaps unsound consequence or misreading of this motto. As with the color system, we must be able to look the world in some sense, to understand the logical context of exclusions and implications, but not tautologies or contradictions. Again, within this system we should not have more surprises.

From logic we should not judge what is actualized or not in the world, but we can understand what *can be actualized* in the world through the horizon of possible articulations of its individuals. And we know that when we understand the possibilities of articulation of the facts. Consequently, understanding a fact somehow, means or implies, understanding all of them. This logical (and mystical) leap from actuality into a network of possibilities is also treated in WWK. "Die Erfahrung kann uns nicht das System der Möglichkeiten geben. Die Erfahrung lehrt nur was ist, nicht, was sein kann. Die Möglichkeit ist kein empirischer Begriff, sondern ein Begriff der Syntax." (WWK, p.214).

Just as in the Tractatus we have the demand for a radical distinction between logic and *empiria* in Wittgenstein's middle period. But, because the middle period is still largely tractarian, it is better to say that we still have this demand of a fine differentiation between what is logical and what is empirical, even though very difficult to be drawn, if not impossible. It reappears in WWK with the already alluded discussion about what makes a complex or a structure an empirical totality or a system. The whole is accompanied by the empirical realm of what can still be said, of the empirical experience of the "how", of the contingent, of the truth. A system brings with it the realm of what can only be shown, of the "logical experience", of the "what", of the necessity, of the sense determination. So here nothing like surprises or discoveries iare possible, because we are operating with internal relations between elements within an established system. These relations determine the forms of actual and possible representation by the multiplicity of the complex and its internally predictable articulatory horizon. While empirical totalities admit to speak of discoveries and surprises, for we are dealing with the system's components' external relations.

This is less about propositions rather than forms of propositions in systems. It is the necessary movement by which one must understand logical systems from empirical totalities that indicates the need to think holistically. This is a situation where understanding a proposition means to being able to understand all propositions, and where understanding a state of affairs represents the ability to understand all of them, and where understanding one component of a system is to be able to bring all other possible constituents with it (*e.g. Farbensystem*). We do not therefore have the possibility of something absolutely unheard of in this context, as Wittgenstein holds in the WWK discussions:

"Eine Klasse von wahren Sätzen wird in ganz anderer Weise begrenzt als eine Klasse von sinnvollen Sätzen. Im ersten Fall wird die Grenze durch die Erfahrung gezogen, im zweiten Fall durch die Syntax von innen. Der Sinnbereich (d.h., die Gesamtheit der x-werte, für welche fx sinnvoll ist) ist von innen begrenzt durch die Natur der Funktion. Und so ist auch die Klasse der Raumpunkte von innen her _ durch die Syntax der räumlichen Aussagen _ begrenzt" (WWK, 214).

Therefore, Wittgenstein believes that he explains a traditional mistake Philosophy with empiricist accents commits. This is the mistake of justifying possibilities by the empirical reality and not the inverse. There is, therefore, confusion between a description and the possibility of a description. Correlatively, space, time and numbers are forms of representation, and thus determine the syntax of what can be said. They follow every possible experience and so it is unsound to ground them in or by the experience. Rather, our experience always evokes, brings, and presupposes these forms of representation. The distinction between empirical totalities and systems in Wittgenstein's middle period evoke the tractarian distinction between internal and external properties.

"Dann muss aber die Angabe eines Raumpunktes schon die Beziehungen zu den andern Raumpunkten enthalten, und das heißt: Die Beziehungen zwischen den Raumpunkten sind intern. Wenn wir die Raumpunkte richtig einführen, so müssen wir sie mit einem Schlag samt allen ihren Beziehungen einführen." (WWK, p. 215). my italics

Also in this context, this discussion is purposefully brought by Wittgenstein into the field of the already drawn tractarian distinction between operation and function. He starts with the differentiation between two types of sets: one set is composed of ordinary empirical objects such as books or hats, and the other is composed of points in space. Clearly, we think there must be some kind of difference here, perhaps in the sense of the latter being more abstract, or more sophisticated or organized. According to Wittgenstein, this intuitive difference follows the distinction between being true and meaningful. To be true presupposes sense. Any group of books or hats presupposes points in space. But not the inverse. This asymmetry is crucial. The extension, ie, how many hats we have in a room is given by the class of true propositions. And this only experience can give us. While, for example, "To be a hat" is a propositional function that accepts an object from a given room to complete its propositional sense. A point in space appears in our empirical propositions differently from objects of experience. It is a form of description of objects of experience, but not vice verse. Wittgenstein then affirms:

"Ein Raumpunkt stellt also eine Möglichkeit dar, nämlich die Möglichkeit der Lage eines Körpers relativ zu andern Körpern. Der Ausdruck dieser Möglichkeit der Lage eines Körpers relativ zu andern Körpern. Der Ausdruck dieser Möglichkeit ist der, dass der Satz, der diese Lage beschreibt, Sinn hat. Der Gesamtheit der Raumpunkt entspricht eine Gesamtheit von Möglichkeit, also eine Klasse von sinnvollen Sätzen". (WWK, p.213)

In more detail we can say that in the two classes of cases, that of true propositions and propositions with sense, we have totalities. However, the totalities are determined in different ways. In the case of true propositions, they are determined by experience and therefore externally. But propositions with sense, are determined by the language syntax and this is internal. So, as we can see, the possibility of expansion and further discovery in this area is limited. The distinction between systems and empirical totalities in Wittgenstein's middle phase corresponds, in some way, to the tractarian distinction between internal and external properties and between sense and truth, respectively. It only makes sense to talk about discovery within time and space. It doesn't make sense to talk about the discovery of new points of the space and of the time because these are spaces of possibilities and not empirical concepts. As Wittgenstein says:

[&]quot;Der Raum ist die Möglichkeit des Wo, die Zeit die Möglichkeit des Wann, die Zahl die Möglichkeit des Wie viel. Wenn man Raum und Zeit _ oder die Zahl _ in Zusammenhang bringt mit den zufälligen Eigenschaften der Welt, so zeigt das schon, dass man auf ganz verkehrtem Weg ist. Raum, Zeit, Zahl sind Formen der Darstellung. Sie sollen jede mögliche Erfahrung zum Ausdruck bringen und darum ist es verkehrt, sie auf die tatsächliche Erfahrung zu begründen." (WWK, p. 214)

Just as we need sense to determine truth (but not the reverse) we need forms of representation for the description of reality, and not the reverse. This seems trivial if we consider that the possibility should always (logically) precede the actuality, or that the meaning must always precede the truth of propositions. However, it is worth noting that by considering actualities, we can notice how they are organized. This organization is possible and therefore we must conclude that this possibility, in turn, should be able to compose a system or syntax. The possibility inserts this actual organization into a system or syntax of possibilities. However, this is not about building points of space as we can create or manipulate events or facts and then try to organize them. Rather, it is a movement of recognition: from structures to possible structures, from experience to the logical space, from a singular to its system, from the proposition to the propositional form, from the representation to the form of representation. This is the holistic or mystical movement of this period.

The points of space must already be organized from the beginning. We do not need to bring more organization to them and it is impossible to conceive of them without an organization. For example, organizing the empirical objects in a room presupposes a previous organization of the points of space. This presupposed organization groups and composes all spatial possibilities of this room.

Marion also see here a clear continuity with the tractarian attempt to draw a fine distinction between what is logical and what it is empirical showing that what is logical in the *Tractatus* turns to what is phenomenological in 1929, with the collapse of the thesis of the logical independence of elementary propositions. This, in turn, evolved into the notion of grammar in 1930. The idea of a natural development of tractarian concepts at this time is revealing: retrospectively in regards to *Tractatus* and prospectively in regard to the writings that comprise the period between 1929 and 1930, rich in ideas (and abandonments).

[&]quot;With hindsight, we can say that this distinction between phenomenology and physics is essentially the same as that, in the TLP, between logic and physics. Moreover, phenomenology is the precursor of the grammar of the 1930s. There is a remarkable continuity here. On the other hand, phenomenology seems to differ from these other conceptions in one crucial respect. This strange form of investigation was to be at the same time "logical" and "a posteriori". For this reason, there is a danger of conceiving of

this "phenomenology" as a discipline lying half-way between a logical and a scientific inquiry." (Marion, p. 126)

In this quotation we can again see indications of the temptation Wittgenstein always seems to avoid: the existence of synthetic *a priori* judgements. In this context of discussion, there is clearly a bridge between the problem of distinguishing between class of empirical things, based on experience (such as hats and books), and a class of components in a system grounded in experience (as the points of space), and the tractarian relevant distinction between function and operation. Revealingly, Wittgenstein writes about this in the WWK:

"Ich unterscheide zwischen "empirischer Gesamtheit" und "System". Die Bücher und Stühle in diesem Zimmer sind empirische Gesamtheiten. Ihre Extension hängt ab von der Erfahrung. Die logischen Partikeln, die Zahlen, die Raum- und die Zeitpunkte sind Systeme. Es ist undenkbar, eine nur logische Partikel, eine neue Zahl, einen neuen Raumpunkt zu entdecken. Hier haben wir das Gefühl, dass alles aus einer Wurzel entspringt. Kennen wir das Prinzip, das einem System zu Grunde liegt, so kennen wir das ganze System. Eine empirische Gesamtheit geht zurück auf eine *Aussagefunktion*, ein System auf eine *Operation*". (WWK, p.216)

In addition, it is natural to present the usual distinction between operations and functions focusing on the results from the distinction between the totalities that can come from both. Operations internally generate or identify objects or elements already expected in a domain, while functions generate truth values. This distinction is clear so we know that "3+5" "generates" the integer "8", while "3+5= 7" generates the truth value false. Applying the tractarian metaphor about points and arrows to the way names and propositions represent the world, one could argue that operations "generate" points in a given system and functions, arrows. This generative feature of operators already appears in the *Tractatus* 5.23: "Die Operation ist das, was mit dem einen Satz geschehen muss, um aus ihm den anderen zu machen." There is also this relation between operation and internal aspects of propositions or systems. "Die interne Relation, die eine Reihe ordnet, ist äquivalent mit der Operation, durch welche ein Glied aus dem anderen entsteht" (5.232)

When we apply the operator conjunction between two propositions, we generate a complex proposition from both. Through the truth-functionality, or the combination of their individual senses, we could *prima facie* generate a new complex sense, entirely composed and expected via the individuals. The numbers,

in turn, can be generated through a progressive application of the operation [+ 1] on a base. Again, according to Wittgenstein in the middle period: "Die Operation tritt dort auf, wo wir es mit Satzformen zu tun haben, die nach einem formalen Gesetz geordnet sind." (WWK p.16). That is, a propositional form is transported to another based on a formal law. So by understanding an operation, which forms a class of propositional forms, we can build up from one other ones. In the context of an operation, we can always use its result to generate "new" results. We can apply it again to its result, indefinitely. However, a function is not enabled to be its only own argument, without paradox. This already appears in the *Tractatus* 5.25 and 5.251:

"Eine Funktion kann nicht ihr eigenes Argument sein, wohl aber kann das Resultat einer Operation ihre eigene Basis werden. Nur so ist das Fortschreiten von Glied zu Glied in einer Formenreihe (von Type zu Type in den Hierarchien Russells und Whitehead) möglich. (Russell und Whitehead haben die Möglichkeit dieses Forstschreitens nicht zugegeben, aber immer wieder von ihr Gebrauch gemacht)."

Moreover, operations can disappear, as in the case of double negation. It was evident for the young Wittgenstein that there were no logical objects and logical constants here in the sense of Frege and Russell.(cf. 5.4). Operators do not require another logic level in reality, but they are already provided in the elementary propositions in its internal relations, like all articulations of individuals already shall be provided in a system. Functions can not disappear in the analysis. According to Wittgenstein, the confusion between operation and function reflected in the confusion between systems and empirical totalities, was the main error in Russell's Philosophy of Mathematics:

"In der Mathematik müssen wir es immer mit Systemen zu tun haben und nicht mit Gesamtheiten. Der Grundfehler Russells besteht darin, dass er das Wesen eines Systems nicht erkannt hat, sondern dass er unterschiedslos empirische Gesamtheiten und Systeme durch dasselbe Symbol _ die Aussagefunktion _ darstellt." (WWK, p. 217)

The totality of possibilities of a system follows the totality of what can be expressed by operations from a base. This, in turn, gives us an overview of all the propositional forms of this system, because all propositional forms have internal relations to each other represented by the operations with which we can generate the components of a system. Thus, we can affirm that we use propositional functions to describe the phenomena of a totality, while operators define the limits of what can be described within this totality.

5.4 Onto-logic

From these reflections on the tractarian holism that extends at least until 1931, we can also understand why it is natural to begin this work with the ontology. Once the world of facts and the way that its facts are related and can be analyzed in terms of states of affairs, *i.e.* in terms of immediate articulations of eternal objects that define the combinatorial horizon of everything that exists, we have a sufficient basis for understanding, reading or seeing the rest. In the ontology we have built up all the "explanation" of the Tractatus: language, logic, mathematics, and the mystical. We must take the claim that the world can be solved through facts seriously. The Tractatus is solved in the ontology that determines and explains its philosophy of logic and language. Here we understand the Wittgenstein's very natural impression that he has settled on all essential issues. The ontology defines the logic of facts and legitimate language. They are all just different facets or perspectives of the same ontology. Subsequently, I defend that this radical holism _ this identity between language and the world and the immersion of any singular in a system _ can be seen in many facets. This concept can be seen through a semantic facet (whereby from a proposition we can understand its negative, or from a proposition we can understand the whole logical space). I also feel it can be seen through an ontological aspect (wherein having a state of affairs means to have all facts already). This is clearly a point of contact between the Tractatus and Wittgenstein's intermediate phase. The notion of a system of propositions is a development of the notion of a logical space. The original theme is the same: to understand a complex we must also understand how this complex is articulated with others. Wittgenstein clearly asserts this clearly in many parts of the WWK, as:

[&]quot;Haben wir nur einmal eine logische Partikel vollkommen durchschaut, so kennen wir alle logischen Partikeln. Es ist undenkbar, eine weitere logische Partikeln zu entdecken. Sie sind _ in gewissen Sinn _ alle zugleich da. Sie Bilden ein System, dessen Umfang und Grenzen wir von vornherein vollkommen klar überblicken." (WWK p.216)

Interestingly, in this passage, Wittgenstein uses "logische Partikel" and "System". Therefore I come to this work trying to prioritize a more philosophically neutral vocabulary to deal with the tractarian ontology, language and logic. In this thesis, I do not refer the reader directly to the language (names and propositions) or ontology (objects and facts) with its already philosophically loaded vocabulary, I always try to use "singular" and "complex." This strategy assures us a healthy ambiguity: we can speak positively, at once, about both the ontology and the language, without assuming a categorical split between the two, at any level.

As already presented, this holistic reading of the *Tractatus* can also represent exegetical gains for its understanding by giving naturalness to its concepts of ontology, logic and language. Moreover, it organically justifies, or reconciles, its problematic visions of the mystic and of ethics with the rest of the work. The idea here is to show the naturalness of the movement from the tractarian ontology to its linguistic and logical considerations. The point of contact in this context may precisely be this strict theory of holism between language, logic and world in the *Tractatus*.

For example, as in the the ontological part we have the following consecutive theses in 2.0123 to 2.0124. In these passages it is said that to know an object we must know all of the possibilities for combinations with other objects in a state of affairs. So we have a criterion in the contrapositive: if we do not know all the ways an object may possibly appear in states of affairs, we do not know the object. This horizon constitutes the combinatorial (modal) nature of the object, so that we cannot think of it outside of these possibilities. Here is there is no room for surprises. "Es kann nicht eine neue Möglichkeit gefunden nachträglich werden." This is fully in line with what Wittgenstein also thinks about systems and logic in his intermediate phase. These combinatorial possibilities are shown in the object, its properties are internal. And colors are always a very good example for this kind of necessary combinatorial kinship. In this way, it is justified the claim in 2.0124: "Sind alle Gegenstände gegeben, so sind damit auch alle möglichen Sachverhalte gegeben". It all goes as if the knowledge of a part would reverberate necessarily or always presuppose the knowledge of the totality where this part is inserted (or must be inserted.) The knowledge of a singular brings along with it, the complex where it must be inserted. Here is the nobility of atomism, hard to be defended, but very attractive from the point of view of theoretical elegance: given all the basic elements of a group and the exhaustive manner that they can combine with each other, we can generate exhaustively and definitely all possible combinations of this group, without surprises and without future discoveries. This can be also found in the middle period. For example, in passage 95 of the PB we have this holistic movement making discoveries unfeasible in the color system. Wittgenstein asks:

"Wäre es möglich, eine neue Farbe zu entdecken? (Denn der Farbenblinde ist ja in derselben Lage wie wir, seine Farben Bilden ein ebenso komplettes System wie die unsern, er sieht keine Lücke, wo die übrigen Farben noch hineingehörten.) (Vergleich mit der Mathematik)."

Coming back to the *Tractatus*, in 5.524, for example, Wittgenstein advocates this kind of ontological holism, by connecting it directly to a kind of semantic or linguistic holism: "Wenn die Gegenstände gegeben sind, so sind uns damit auch schon alle Gegenstände gegeben. Wenn die Elementarsätze gegeben sind, so sind, uns auch alle Elementarsätze." Such a transition between ontology and semantics, which cannot be overseen, appears again in 5.134 and 5.135, but now in reverse: "Aus einem Elementarsatz lässt sich kein anderer folgern. Auf keine Weise kann aus dem Bestehen irgend einer Sachlage auf das Bestehen einer von ihr gänzlich verschiedenen Sachlage geschlossen werden." This transition, in both directions, is entirely justified if we take the language consisting of facts, the same facts that make up the world, so that to talk about the world means to talk about the language and vice versa. A result in one context or perspective automatically represents a result in another context. This is not because there is an isomorphism or essential harmony between language and world but because they are one.

We can also observe this change of perspective within the same domain in 4.125: "Das Bestehen einer internen Relation zwischen möglichen Sachlagen drückt sich sprachlich durch eine interne Relation zwischen den sie darstellenden Sätzen aus." This is also clear in passage 5.4711 - a kind of a summary of the tractarian spirit: "Das Wesen des Satzes angeben heißt das Wesen aller Beschreibung angeben, also das Wesen der Welt." This is not because the two are very harmonious but because the two are formally identical: they comprehend the same combinatorial possibilities of its components. The articulatory horizon of the

world's facts is the same as the articulatory horizon of the propositions of language. "Die Welt zerfällt in Tatsachen". There is no strict distinction between language, the world and logic in the *Tractatus*. According to 4.014:

"Die Grammophonplatte, der musikalische Gedanke, die Notenschrift, die Schallwellen, stehen alle in jener abBildenden internen Beziehung zu einander, die zwischen Sprache und Welt besteht. Ihnen allen ist der logische Bau gemeinsam. (Wie im Märchen die zwei Jünglinge, ihre zwei Pferde und ihre Lilien. Sie sind alle in gewissem Sinne Eins.)"

Semantically we can see this holism in other facets. That is, we can see the need to read off a comprehensive overview of possibilities from an actuality, or from a singular to read off the complex in which is inserted. Thus, we see how the lost passage 3.3421 becomes a protagonist as a tractarian motto in our interpretation (and even in the Philosophy itself of Wittgenstein!): This is the possibility of a singular be able to "throw" us into a complete horizon of articulations. This becomes clear if we take seriously the tractarian requirement that it is not possible to say something without also bringing with it the possibility of its negation. As he does in 5.44, Wittgenstein reinforces the non-reference of the negation signal and states, like he does in 3.42, that a proposition always brings its negation as a precondition of its understanding:

"Die Wahrheitsfunktionen sind keine materiellen Funktionen. Wenn man z. B. Eine Bejahung durch doppelte Verneinung erzeugen kann, ist dann die Verneinung _ in irgend einem Sinn _ in der Bejahung enthalten? Verneint "~~ p" ~ p, oder bejaht es p; oder beides? Der Satz "~~p" handelt nicht von der Verneinung wie von einem Gegenstand; *wohl aber ist die Möglichkeit der Verneinung in der Bejahung bereits präjudiziert.* Und gäbe es einen Gegenstand, der "~" hieße, so müsste "~~p" etwas anderes sagen als "p". Denn der eine Satz würde dann eben von ~ handeln, der andere nicht." my italics

The consequence of this view is the assumption that we can not really say anything without bringing up the notion of falsehood, as provided in the essential bipolarity of language. Syntactically, we cannot affirm something without providing its meaningful negation. In WWK Wittgenstein still remains with this interpretation of imbrication between truth and falsehood, referring this discussion, albeit perhaps not consciously, to the field of the same kind of logic articulation to be found in the context of exclusions by contrariety: "Positive und negative Sätze stehen auf einer Stufe. Wenn ich den Maßstab anlege, so weiß ich nicht nur, wie lang etwas ist, sondern auch , wie lang etwas nicht ist. Wenn ich den positiven Satz verifiziere, so falsifiziere ich damit auch den negativen Satz. In dem Augen blick, da ich weiß, dass die Azalee rot ist, weiß ich auch, dass sie nicht blau ist. Beides ist untrennbar. Die Bedingungen für die Wahrheit eines Satzes setzen die Bedingungen für seine Falschheit voraus und umgekehrt." p.87

This discussion can be found again in the *Tractatus*, as in 5.5151:

"Muss das Zeichen des negativen Satzes mit dem Zeichen des positiven geBildet werden? Warum sollte man den negativen Satz nicht durch eine negative Tatsache ausdrücken können. (Etwa: Wenn "a" nicht in einer bestimmten Beziehung zu "b" steht, könnte das ausdrücken, dass aRb nicht der Fall ist.) Aber auch hier ist ja der negative Satz indirekt durch den positiven geBildet. Der positive Satz muss die Existenz des negativen Satzes voraussetzen und umgekehrt."

I believe that this notion of "pressupposition" (Voraussetzung) or of "bringing together" (*mitbringen*) is the logical and, so to speak, holistic step - both in the Tractatus and in Wittgenstein's middle period. In the latter, I would say that this principle of a semantic holism is radicalized in the view of propositional systems: I do not have the number seven without bringing all the other numbers and its organization. I cannot say "it is 30 degrees Celsius now" without knowing that other possible temperatures are automatically excluded. Otherwise one is allowed to infer that I did not understand what temperature and grads mean. I do not have green, without bringing all the other colors and their relationships. I cannot identify an animal as a lion, without knowing that it is an animal, thus bringing with it, or presupposing, therefore, that it cannot be any of the other animals. We cannot say that our soccer team has won yesterday, without automatically bringing with that the possibility of a tie or a defeat. If one understands that a book is on this table, one must be able to understand that the book cannot be simultaneausly on that other table, nor other on the rack, nor under the table etc ...

In logic we can also see this holism in other facets. For example, what are we affirming when we affirm something like the truth-functional completeness of operators? What are we saying when we say that the group (negation and conjunction), for example, entails, implies, captures, expresses all the operational logical possibilities? The group (negation and conjunction) is a limitation of our language, but not of our logic. Our expressive power remains the same because we still have the same horizon of expressibility. Understanding this is to

understand that a (complete) part of logic always echoes or brings the entire logic. This is the idea of reducing all operators to a simultaneous negation. And this idea appears in the *Tractatus*, clearly based on the idea of bipolarity essence of language. Thus, the economy here is remarkable because the non-denotational operators win and show us how from some or even one we can generate or presuppose or bring along an exhaustive totality. From just one part or element we can have a entire system. As in 5.442, in a context of disappearance of logical operators, we have: "Wenn uns ein Satz gegeben ist, so sind mit ihm auch schon die Resultate aller Wahrheitsoperationen, die ihn zur Basis haben, gegeben."

The movement is always the same: the understanding of a part must lead to the understanding of the whole in which this part is inserted. We see this motto clearly in the important passage 3.42. It remains in the middle period. It marks the movement of recognition of a proposition within the logical space, or after, the recognition of a proposition in its system of propositions, to which it necessarily belongs:

"Obwohl der Satz nur einen Ort des logischen Raumes bestimmen darf, so muss doch durch ihn schon der ganze logische Raum gegeben sein. (Sonst würden durch die Verneinung, die logische Summe, das logische Produkt, etc. immer neue Elemente __ in Koordination __ eingeführt.) (Das logische Gerüst um das Bild herum bestimmt den logischen Raum. *Der Satz durchgreift den ganzen logischen Raum.*) my italics.

In the first parentheses we see the argument revisited here on nondenotation of logical operators. This passage is central for understanding the radicalization of the *Tractatus* or the conceptual shift advocated here in the direction of the middle period. In the second parentheses in fact we have the place of holism, when from a proposition we can grasp the logical whole or system to which it belongs. It echoes through the middle period, just as shown in WWK:

Here Wittgenstein clearly uses the tractarian notion of logical space to refer to the notion of a propositional system in the middle period from the rising *Color*

[&]quot;Wenn ich sage: "Es hat null Grad", so habe ich damit den Nullpunkt des Temperaturraums charakterisiert. Wenn ich sage: ich habe keine Magenschmerzen", so sage ich gleichsam: "ich befinde mich im Nullpunkt des Magenschmerzraums." Aber der Satz setzt bereits den ganzen logischen Raum voraus." (p.86) my italics

Exclusion Problem. This shows the naturalness of thinking about the notion of system as a natural evolution of the notion of logical space _ an understanding that also justifies our interpretation of a semantic holism.

On December 25th 1929, Schlick asks Wittgenstein about the extent to which the belonging of a color to a color system is an empirical or logic question by the discussions under the rubric Die Welt ist rot. To introduce the discussion Schlick proposes the following thought experiment: Could a person who has lived his whole life locked in a completely red room claim "the world is red"? Could he say that he only sees red, without ever having had contact with other colors or with extensions of the room? Wittgenstein then shifts the question to the presuppositions of such a statement. (As is clear by Wittgenstein's Philosophy as a investigation of possibility and not of truth.) The question is not whether "the world is red" is true or not, but if it makes sense or even if this utterance can be expected. It is about the system of space and of color, which would give sense to such descriptions. Wittgenstein replies that for this person to make this statement he must know that he is in a room. So he should know through the syntax or system of space that this room should have extensions, that is, that there is a continuity of this "world". And that understanding certainly does not come from experience, as it comes from the syntax of the space which is a priori, and therefore logical. Wittgenstein continues:

Schlick's question seems to be the ideal ground for the development of the ideas of systems of propositions emerged from the natural development of the notion of logical space and the *Color Exclusion Problem* through the function of denial. This question seemed so central to Wittgenstein, that he in January 1930 returned to the theme to illustrate the idea that every proposition is necessarily embedded in a system of propositions. To understand a proposition is to understand a whole system of propositions in which it is inserted. By the contrapositive, unless we understand this system, we cannot understand the

[&]quot;Hat nun die Frage einen Sinn: Wie viele Farben muss jemand erlebt haben, um das System der Farben zu kennen? Nein! (Nebenbei: Eine Farbe denken, heißt nicht: die Farbe halluzinieren.) Hier bestehen zwei Möglichkeiten: a) Entweder ist seine Syntax dieselbe wie unsere: rot, röter, hellrot, gelbrot usw. Dann hat er unser ganzes Farbensystem. b) Oder seine Syntax ist nicht dieselbe. Dann kennt er überhaupt nicht eine Farbe in unserem Sinn. Denn wenn ein Zeichen dieselbe Bedeutung hat, muss es auch dieselbe Syntax haben. Nicht auf die Menge der gesehene Farben kommt es an, sondern auf die Syntax. (so wie es nicht auf die "Menge Raum" ankommt.)". (WWK, p.65)

proposition. This is no longer only in the case of statements about color or gradation empirical of qualities - cases, as we have seen, of exclusions by contrariety. After 1929, this is the case for any proposition. This is what I call here semantic holism:

"Ich komme noch einmal auf die Frage von Prof. Schlick zurück, wie es wäre, wenn ich nur die Farbe Rot kenne. Darauf ist folgendes zu sagen: Wäre alles, was ich sehe, rot, und könnte ich das beschreiben, so müsste ich auch den Satz Bilden können, dass es nicht rot ist. Das setzt bereits die Möglichkeit anderer Farben voraus. Oder das Rot ist etwas, das ich nicht beschreiben kann _ dann habe ich auch keinen Satz, und dann kann ich auch nichts verneinen. In einer Welt, in der das Rot quasi dieselbe Rolle spielt wie die Zeit in unserer Welt, gäbe es auch keine Aussagen von der Form: Alles ist rot, oder: Alles, was ich sehe, ist rot. Also: Sofern ein Sachverhalt vorliegt, kann er beschrieben werden, und dann setzt die Farbe Rot ein System von Farben voraus. Oder Rot bedeutet etwas ganz anderes, dann hat es keinen Sinn, es eine Farbe zu nennen. Dann kann man auch nicht davon sprechen." (WWK, p.88)

Here the argument becomes clear: if I can say that "the world is red," I can say that "the world is not red," because to say something brings together the (legitimate syntactic) possibility of its negation. Following from the *Tractatus*, if I say "the world is not red," then I have to also be able to say "the world is then blue or yellow or green ...". These propositions would be syntactically plausible and therefore meaningful. Understanding red presupposes, or brings with it, the existence of other colors.

A color presupposes, or brings with it, the system or logical network in which it is inserted. As Wittgenstein categorically stated in WWK: "Der Satz duchgreift den ganzen logischen Raum" (p.91), otherwise we would not be able to understand the negation of propositions. Evoking and developing the sense of the passage of the *Tractatus* 3.42. There we have exactly the same proposition: "Der Satz durchgreift den ganzen logischen Raum".

This sentence is translated into English by Pears and McGuinness as "the force of a proposition reaches through the whole of logical space", and into Portuguese, by Dos Santos as "a proposição alcança todo o espaço lógico (the proposition reaches all the logical space"). "To reach" is much more neutral and elegant than "durchgreifen" which is used in more energetic and dramatic contexts. In German, "durchgreifen" is used, for example, to mean a comprehensive, effective and fundamental intervention in a field (by perhaps by the police). In his translation into Portuguese, Giannoti uses the verb "apanhar"

(something like "to catch"), which captures better the violence of "durchgreifen". However, "catch" or "reaching" still allows an external or visual distance of movement, as a movement propelled from outside to achieve something that is somehow distant. Thus, perhaps the word "permeate" would be a better translation, but it is also not quite appropriate because is still non-violent.

The proposition permeates all the logical space. There is no object without a logical space of possibilities where this object is inserted. There is no proposition outside of a system of propositions where it is inserted. Here the interpretation by Bento Neto is also justified, when he says that things, in this period in phenomenological Philosophy, with strong tractarian echoes, are more spaces than objects. However, Bento Neto thinks this feature is restricted to some groups of propositions, such as about colors and gradations, following *Some Remarks*:

"In the context of mutually exclusive propositions, we have different possibilities which cannot be unified in a point of the reality, precisely because they are exclusive. There is nothing that can host them simultaneously; they cannot be unified in the same point, they have to so to say rest side by side. As a result, what is indicated or pointed by an exclusive predicate name, before and independently of a choice, what is pointed indifferently by all the mutually exclusive predicates, is not a point or a part of the reality, but the set of all these possibilities, which are mutually external, since they cannot live together. What it is common to all the choices and it is indicated by each one of them is immediately in the level of the possibility. The object color is not a cluster, but a space of possibilities." (Bento Neto, p.129)

My interpretation, however, extends this feature to all propositions as we try to defend why we propose semantic holism as a more adequate interpretation of this phase, as indicated by the discussions going on WWK. This notion of imbrication or logical dependence of all individuals of a complex is already being prepared in the ontology of the *Tractatus*. And, as we have seen, it causes a sort of collision with theses of logical independence. In fact, taking this holistic interpretation seriously, we should already be able to see, from the tractarian ontological part, Wittgenstein's theses about the linguistic part and vice versa. This is also confirmed with the problems. Everything goes in the *Tractatus* as each level (be it ontological, logical or semantic) had concentrated all the theses in itself and also all problems tackled by Wittgenstein in his youth (as well as the notation of the truth table as defended in Chapter 3).

For example, the secondary literature presents the *Color Exclusion Problem* in the passage 6.3751, when we can not sublimate the kind of exclusion of a color

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system with the crude tractarian logic of tautologies and contradictions. We have seen that we can anticipate this problem earlier than that, when Wittgenstein says in 5.513 that: "Jeder Satz hat nur ein Negativ, weil, es nur einen Satz gibt, der ganz außerhalb seiner liegt", which relates to exclusions by contradiction but not by contrariety. Strictly speaking, if we combine passage 2.0131 with passage 2.061, we can see that the ground for the Exclusion Color Problem is already prepared in the tractarian ontology as well. When Wittgenstein deals with a logical space of colors, a logical space of sound and of objects of the touch, which assumes that an object has to have a color, that a sound has to have a frequency or pitch, and that an object of touch has to have a hardness, he shows us that an object of our experience has indeed to be an inhabitant of several systems or combinatorial logic spaces.

What Wittgenstein does not realize there, is how this statement will collide with the thesis about the logical independence of state of affairs. If I know that a sound has, for example, the pitch "a", I then understand the fact that this sound does not have the same pitch "a" is possible. Similarly, as with the example of the "red world", one must be able to understand the alternatives. Therefore, one must comprehend the possibility of the fact of this sound having a pitch "b" or the pitch "c" and so on ... that is, all other possible gradations provided for pitches. We know that these states of affairs are negative. Although they may not be present in the world they should be possible. We also know that the actuality of one necessarily excludes - not by contradiction but by contrariety - the actuality of another state of affairs. So in this part we have here the ontological problem that will appear later in passage 6.3751, which brings up the inability to analyze these facts or propositions in terms of exclusions by contradiction. The bet is that these exclusions should be sublimated in the analysis of our propositions, but that they cannot be reduced to truth-functional parameters, compositional ones. As we have seen the problem is postponed, but not resolved.