1. INTRODUCTION

This work deals with the period of transition and abandonment of the *Tractatus*. It examines the partial failure of the truth-functional paradigm embodied in the truth table limitations found therein. My aim is to investigate the collapse and abandonment of the *Tractatus* held as a project to develop the attractive picture of a logic completely combinatorial, syntactical and neutral. There is in this project an unsolvable tension between this image of a neutral logic and the demand that it must be used to completely analyze the facts in the world. There are more logical connections than the tractarian logic, with its tautologies, contradictions and truth-functionality, can express.

Viewed rigorously, the truth table's compositionality as a pattern for analysis was found to be insufficiently comprehensive for the ambitious project of logically analyzing all empirical propositions. This is because of its lack of sensitivity in capturing logical subtleties, such as necessary material truths and contrary propositions arrangements, just as in the paradigmatic case of the ascription of a degree to empirical qualities. This ascription problem was assumed as a general case of the colors exclusion. This shows that there are indeed logical constructions that do not appeal to truth-functions. Some logical connections do not submit to the truth-functional analysis. Some exclusions and implications go un-captured by the truth-functional paradigm, the hallmark of the tractarian logic. Some empirical propositions are conceptually linked in such a way that they cannot be logically independent, so they have to occur in an extra-logical system of implications and exclusions _ a system that appeal to empirical or synthetic intuitions. This demand is linked with the new conception of logic that arises in the middle period of Wittgenstein's Philosophy. This logic could not be more strictly formal, neutral, complete, purely combinatorial _ signature features paradigmatically embodied in the truth table notation.

The logic in this period begins to depend on a great number of non-logical facts, which, in turn, has determined the review of many tractarian themes, chiefly the pictorial nature of language _ the heart of its *Bildkonzeption*. A change in this truth-function paradigm in the propositional analysis imposed changes in the *Bildkonzeption*. This is responsible for the metaphysical conceptual ground for the

propositional sense and for the bipolarity thesis. This, in turn, provides the unique form of propositional exclusion in *Tractatus*. With any given proposition we would only have one and only one other proposition that can be totally outside of the former. For, as Wittgenstein maintains in passage 5.513: "Jeder Satz hat nur ein Negativ, weil es nur einen Satz gibt, der ganz außerhalb seiner liegt." Here the limitations of tractarian logic are clear: limitations appear in dealing not only with the colors mosaic (6.3751), but also with the entire opposition paradigm which can be encountered in the exclusion by contrariety. An empirical proposition can have many, possibly even infinite, negatives or propositions which are not completely outside of it. The phrase "not completely" is relevant here, because it shows a tension in systems of propositions: although some propositions belong to the same system, they exclude each other, but not in a radical way like the exclusion by contradiction. This possibility of multiple oppositions to a proposition is contrary to that which is expressed in passage 5.513. Here, as we will see, the Color Exclusion Problem is already being rehearsed through the negation role on this radical stage of bipolarity.

Later revisions to the Tractatus show that the problematic points were not only due to a false conceptual arrangement nor in a relative deficiency or weakness at the moment of its application. Rather, these revisions show that there was a fundamental fragility in the tractarian project, i.e. a deficiency in the presuppositions themselves. The problems there were neither about a human failing or incapability, nor about a momentous lack of instruments and more satisfactory notations to carry out the project, but they were about a logical impossibility. The tractarian building began to fall down when it was recognized that it would be impossible to reduce all propositions in terms of independent elementary propositions. In brief, from the truth-function pattern, we cannot reduce all contrary exclusions in terms of contradiction exclusions. This reduction-bet is totally congruent to the tractarian bipolarity, when it tries to reduce all logical connections to the conjunctive negation. The Color Exclusion *Problem* points to a larger logical problem: the expressiveness of contrary propositions. This make us revise the extent to which logic must be more sensitive to some empirical arrangements, although not contingent ones. Indeed, the conceptual arrangement of colors seems to carry or bring logic into the world.

Along these lines, this thesis deals with the transition period in Wittgenstein's Philosophy, especially with the abandonment of *Tractatus*, held here as a project or a program. The guiding thread here is a Leibnizian intuition, which I identify in this tractarian period. This is the idea that a symbolic or notational system must be able to follow or capture the logical rules of the language. This reflects on the demand or ideal that an alleged language's profound syntax must be systematically reflected by a perspicuous notation, in such a way that nonsensical constructions should be avoided by a simple inspection of this notation. I hold that the tractarian project has two main branches: i) the thesis about the logical independence of elementary proposition, which falls in 1929 due to the *Color Exclusion Problem*, and ii) the demand for a complete analysis of language in order to exhibit its hidden logical ground, which falls in 1931. By this last fall, I mean the abandonment of the tractarian project itself.

My thesis here is that the tortuous way from "what still can be made, but in other terms" to the final point to be reached, which in fact never could have been reached, because it was an illusion, passes necessarily through the recognition of the limitations of the notational means thought in *Tractatus*. I hold here that the notation there incorporates all the positive and negative aspects of Wittgenstein's early thought. Its positive aspects, such as presuppositions, principles, concepts and images. And its negative ones, such as the essential limitation of the intended answers. The truth table notation (held to be the most adequate one) does not at last show the essence of language and does not prevent nonsense. This, in turn, has led to the reformulation of the allegedly pictorial and compositional features of language. In this way, the recognition of logical deficiencies and mistakes in *Tractatus* must naturally anticipate its abandonment.

In the first section of this thesis, I critically present the *Tractatus*. I do this in order to later investigate, by means of a conceptual reconstruction, the collapse and abandonment of its project from four unavoidable collapses of its main interdependent pillars: I) the Compositionality; II) the truth tables; III) the *Bildkonzeption*; and IV) the Neutrality of Logic.

There are four central points that I cover respectively in this investigation: 1) Problems with the expression of colors and numbers, and its relation with functional and spatial intuitions; 2) the central role and limits of the truth tables as a special notation to reveal the essence of the language and avoid absurdities; 3) a criticism of the recurrent interpretation of an isomorphism between elementary propositions and atomic facts; and 4) the central role of the tractarian holism which forms the background to the unavoidable collision between the logic and its application. In this section I highlight the kind of invasion of empirical arrangements and elements in the (allegedly) neutral domain of logic.

In the first chapter, I deal with the Color Exclusion Problem, correlating it with the degree problem, which, in turn, reveals itself as touching on a classic Aristotelian problem: the logical form of contrary exclusion. This kind of exclusion, which is more sophisticated than contradiction, escapes from the truthfunctional paradigm. I believe Wittgenstein did not see this problem because he indeed believed in the possibility of "sublimating" contrary exclusions, by means of the NOR, in terms of contradictions. This more sophisticated exclusion challenges the neutral spirit of Tractatus, because it brings to the logic the demand of dealing with empirical arrangements inserted in systems. Following my thesis, we can maintain that the problem there lies in the tractarian paradigm of logic itself, and not only with the expressibility of the relations among colors or numbers. This can be seen in the non-capability of the truth table notation in avoiding impossible concatenation of empirical propositions. This notation is, in a logical point of view, simply not sensitive enough. In this way, the problem lies not in the allegedly "contradiction" that follows when we try to articulate the propositions "this point is red" and "this (very same) point is blue". (See, for example, to read contradiction here is at least an inaccuracy.) The problem lies in the nonsense, the conjunction of these propositions, allowed by the notation that Wittgenstein held as being perspicuous and that must have delivered us, as a result, the essence of language. Following this view, I contend that the famous "Color Exclusion Problem" does not appear only in 6.3751, but can be already seen in the ontological part of Tractatus. More precisely by the conjunction of 2.0131 and 2.06. Wittgenstein seems to confirm it in the revealing §83 of Philosophischen Bemerkungen.

In the second chapter, I investigate the truth table as a privileged notational instrument for the interpretation of *Tractatus*. I defend this "layman's tool" _ used nowadays in any basic logic manual _ as a useful metaphysical instrument to systematically and silently reveal the absolute horizon of the logical space or even the essence of the language in *Tractatus*. In the truth tables we can read many _ if

not all _ the positive theses of *Tractatus*: from bipolarity and the insistence on a complete logical analysis of language, to the distinction between sagen and *zeigen*, and the non-necessity of the sign of identity, passing by the exhibition of the ideal of a completely neutral, syntactic and combinatorial logic. In its negative counterpart, we can also defend that Tractatus fails where the truth table fails. The limits of *Tractatus* are found in the limits of the expressibility of the truth tables. Put straightforwardly, the truth tables and the compositional paradigm of Tractatus do not have enough sensitivity to exhibit some of the logical concatenations among empirical propositions, such as that of contrariety. In particular, the second chapter of this thesis shows that metaphysics can be seminal, even when unsound and/or abandoned. Nowadays, truth tables are lay tools widely used in our manuals, as with the Cartesian coordinate field, or the Leibnizian infinitesimal calculus, or even as the case of the Fregean symbolic logic. When we deal with such tools in a "secularized way", we are working with the assets of a failure, i.e., we are moving through the assets, the material goods, of metaphysical systems.

In the third chapter, I deal with the attempt of reorganizing the tractarian *Bildkonzeption* after the recognition of the "*Color Exclusion Problem*". After the recognition of this problem, the tractarian absolute logical space seems to shatter into numerous complete grammars or systems. I defend the view that after this fragmentation there is a revealing dislocation from the metaphor of proposition as *Bilder* to propositions as *Maßstäben* (rules). Moreover, there is a new central role of a special notion of logical multiplicity, which is not solely responsible for the equinumerosity between the representation and the complex to be represented, as in *Tractatus* (4.04). Later in this chapter I go on to criticize the habit in the secondary literature of ascribing an isomorphism to the tractarian *Bildkonzeption*. I then try to investigate what this anachronistic ascription can do to the conceptual geography of the *Tractatus*.

Ultimately, in the fourth chapter, I deal with more general problems with respect to the neutrality of logic in the process of transition of Wittgenstein's Philosophy, a transition wherein a purist and attractive conception of logic (5.473) has to be abandoned. I hold that this happens because a logician should, in the end, contrary to what Wittgenstein held in the *Tractatus*, examine conceptual and empirical arrangements in the world. I investigate the extent to which logic should

follow or capture our intuitions of validity or whether _ on the contrary _ our intuitions should be organized or legitimated by logic, with it held as a normative element. After all, must a perspicuous notation be the result of our language or is it, rather, the criterion for its logical analysis? Or both? In this chapter, I then list and organize some "spatial" metaphors and images which are used in the context of exclusion and the ascription of coordinates to the visual field. Those metaphors do not seem to be accidental. Indeed, they seem to throw logic into the world. That is, it seems to make logic less neutral and abstract. These metaphors impose logic to the world with empirical exclusions and incompatibilities, but these are somehow yet logical ones. This allows us to postulate the very existence of an infinite number of logical exclusion degrees, not to be expressed by the truthfunctional paradigm. And from this context we can discuss many facets of the holism presented in this tractarian phase. We can already see a need for a sharp distinction between an empirical totality and a system of propositions (*Satzsystem*) due to the existence of a holism already uncovered in the 3.42. In this passage we find the idea of automatically bringing (mitbringen) or presupposing (voraussetzen) "a logical space" (or system or grammar) with the understanding of a proposition. This happens because the bipolarity reflects itself in the necessary syntactical possibility of negation. The negation, which is always provided by the syntax, justifies the explosion of semantic nuances of a proposition in a system, to which it belongs. The negation is then a syntactical device that bring to us a semantic universe, at least in some propositions. I hold that the acknowledgment of a complete net of possibilities via an actuality (eg. logical space via a proposition) represents the logical movement itself, which justifies the mystical perspective.

The turning point in Wittgenstein's thought invited indeed the opportunity for changing the way his Philosophy can be organized or classified. However, recognition of this turning point does not mean maintaining that Wittgenstein brought a new method in a direct and definitive way to his thoughts. This thesis concentrates itself on the first years of this process of change. Here I try to partly answer the question-challenge proposed by M. & J. Hintikka in the search for a decisive change in the orientation of Wittgenstein's Philosophy: "Was für ein Wandel tritt in Wittgensteins Denken ein, als er sich von seiner frühen Philosophie entfernt und sich auf seine späteren Ideen zubewegt? Der erste und entscheidende Wandel wird bekanntlich irgendwann um 1928/9 vollzogen. Aber was ist das für ein Wandel? Es ist eine traurige Randbemerkung zu den Standards der heutigen Wittgensteinforschung, das die Dringlichkeit dieser Frage nur von wenigen unter den aufmerksamsten Autoren erkannt worden ist.¹" (Hintikka & Hintikka, p.137)

I accept the question. I then try to determine some central dates and to respond as to what has changed and what has been abandoned. My attempt here is to draw conclusions about what these changes and abandonment represent for Wittgenstein's Philosophy. Even when the turn continues to be consolidated even after the abandonment of *Tractatus*, I defend that this happens within the discussion and abandonment of two root ideas already presented briefly here: the logical independence of elementary propositions (in 1929) and the complete analysis (at the end of 1931). I hold that these are the neuralgic points in the abandonment of *Tractatus* as a program to be carried out. Kienzler seems to agree with these dates:

"Am 24. November 1931 beginnt er damit, die eigenen älteren Bemerkungen unter dem neuen Aspekt kritisch durchzugehen, um die neugefundene Sichtweise weiter einzuüben und ihre Fruchtbarkeit zu prüfen. Wittgenstein hat also keine neue Theorie des Satzes, der Wahrheit oder der Sprache eindeckt, sondern eine neue Betrachtungsweise philosophischer Probleme überhaupt gefunden. Dieses ist genau der Punkt, in dem er sich, ohne sich selbst ausdrücklich zu nennen, mit Kopernikus und Darwin vergleicht, die beide ebenfalls Umwendungen, Revolutionen des Denkens vollbracht bzw. Eingeleitet haben, indem sie eine neuartige Methode und Betrachtungsweise der gegebenen Phänomene einführten." (Kienzler, p.29)

As is evident in this passage, Kienzler concentrates on a general methodological change in this middle period – a change he calls: "Bemühung um die richtige Methode zur Behandlung philosophischer Probleme²". But Kienzler does not see this in the internal analysis of some punctual aspects in *Tractatus*,

¹ Throughout their book, Hintikka & Hintikka try to prove that the turn happens with the change in the paradigm of language. Accordingly, the period from the *Tagebücher* 14-16 to the works in 1929 is supposed to be the phenomenological language part of Wittgenstien's Philosophy. From there on until the *Philosophische Untersuchungen* is supposed to be the physicalist phase – a phase dedicated to the daily and public language. In contrast to Hinttikka and Hintikka, I think the change is not a question of a new method or of a new image of language, but it is a natural change in Wittgenstein's view of logic due to problems with of the language analysis implementation.

^{2 &}quot;Die Interpretation von Wittgensteins Philosophie als einer Beschäftigung mit verschiedenen Problemfeldern verhindert ein angemessenes Verständnis seiner Denkweise und deren Entwicklung vollkommen, denn das Spezifische von Wittgensteins Bemühung um die richtige Methode zur Behandlung philosophischer Problem, und damit das grundsätzlich Bedeutende seines Denkens, gerät so gegenüber den Einzelfragen ganz aus dem Blick. Dies gilt gerade für Wittgensteins Beschäftigung mit der Sprache, die er nie als Selbstzweck vornimmt, sondern immer unter einem übergeordneten Gesichtspunkt: Wittgenstein ist kein Sprachwissenschaftler." (Kienzler, p. 17)

such as the notational ideal à la Leibniz and the problem of the contrariety expressiveness³ as proposed in this work. Curiously, nothing is said in Kienzler's book about the "*Color Exclusion Problem*" and the changes in the tractarian *Bildkonzeption*. Rather unsatisfactorily, Kienzler just makes a few references to the truth-functional paradigm and the truth table's limits. In spite of this, I believe that our perspectives are complementary and that my considerations largely serve to justify his tentative periodization of, and assumptions relating to, perspective and methodological changes in Wittgenstein's Philosophy. Kienzler orientates his investigation according to these general points.

I agree with Kienzler that the tractarian phase ends with the texts of 1931. In this way, beginning with the *Philosophische Grammatik*, *Big Typescript* (103 and 104) and *The Blue Book*, we already have a new Philosophy. Put briefly, we can see a critical detachment from the tractarian dogmatism at this juncture by attempting to understand its presuppositions and systematically deconstructing Wittgenstein's youthful mistakes:

"Auch eine einfache Betrachtung der Buchanfänge Wittgenstein führt zu einem ähnlichen Resultat: Buchheister und Steuer geben in ihrer Einführung zur eine Liste, die der dogmatischen Anfänge des Tractatus und der Philosophischen Bemerkungen den fragenden und kritischen Anfängen der Philosophischen Grammatik und des Blue Book gegenüberstellt. Der entscheidende Übergang in Wittgensteins Denken drückt sich dann darin aus, dass die Darstellungen seines Denkens nicht mehr mit irgendwelchen Behauptungen über die Welt oder die Sprache beginnen, sondern mit einer kritischen Modellvorstellungen Hinterfragung bestehender von Sprache. Innerhalb der Nachlaßpublikationen geschieht der Übergang im Zeitraum zwischen den Philosophischen Bemerkungen und der Philosophischen Grammatik." (Kienzler, p.23)

It is worth noting, however, that it seems to me highly unlikely that a Philosopher that always prioritized precise understanding and absolute clarity in

³ Another author that concentrates himself on the methodological change or emergence of a new way of thinking in Wittgensten's Philosophy is Stephen Hilmy. From the first paragraph of the preface of his book, Hilmy affirms: "What emerges in his philosophical writing after 1929 is a "way of thinking" (Denkweise), a way of doing Philosophy." (vii) With this work of Hilmy, it also appears the relation of complementarity that we can see in comparison to Kienzler's book. I believe that the results of my thesis make clearer the need to change his Denkweise while also, as a result, highlighting the Tractarian deadends. In the unavoidable generality in the exegetical aim of seeing a change in the Denkweise, some punctual aspects which are for me central in this work are lost and not even touched on by Hilmy. These include elements such as the Color Exclusion Problem, the logical independence, truth functionality, truth tables, and isomorphism. Hilmy's failure to address these aspects. This justifies or naturally forgoes the change in his Philosophy: "The present study of the emergence of aspects of Wittgenstein's method or approach to Philosophy in his later writings is justified both in the sense that one must be clear what Wittgenstein is doing before one can adequately asses his results [thus this study is a necessary step on the way to such an assessment], and in the sense that it is precisely his approach to Philosophy, and not so much his specific philosophical conclusions or doctrines, that Wittgenstein wished to convey in the first place" (p. 6) In this work, I take the inverse tract by focusing on the tractarian conclusions and doctrines which led Wittgenstein to his new approach to Philosophy.

all contexts that we face, thereby systematically combating the necessity for creating new things, would begin shifting with so general theme such as the change of a philosophical method or of "allgemeine Auffassung der Philosophie". The demand for a change in methodology is much more of a natural result of punctual (logical) problems in *Tractatus* than the actual cause for a shift in his Philosophy. This *internal* perspective it is not to be found in the work of Kienzler.

1.1.

A Presentation of the Tractarian Project and the Beginning of its End

"This is a most important book containing original ideas on a large range of topics, forming a coherent system, which whether or not it be, as the author claims, in essential the final solution of the problems dealt with, is of extraordinary interest and deserves the attention of all philosophers." Ramsey, *Critical Notes*, p.465

The Tractatus (1921) was an attempt ambitious and critical but also misleading and finally abandoned _ to deal *im Wesentlichen* with all philosophical problems. In this project precise philosophical problems would not be solved not sequentially, nor in any order, nor even individually. They were meant to be dissolved en bloc, with the understanding of a common origin or source: the misunderstanding of the logic or essence of our language. Once the origin of the problem was understood, we would have at our disposal a method and criterion for systematically avoiding the formulations of absurdities and positive philosophical theses: the logical analysis of propositions through a privileged notational system which exposes the profound and hidden rules of our syntax. A proper language should then prevent us from logical mistakes (cf. 5.4731). In this way, we would at once have both avoided philosophical nonsense and understood transparently the functionality of language. The metaphysical interdiction would rest largely upon the transparency of the limits of what we can legitimately reach through our language. Through symmetry, the revisited Philosophy's task would be to dig up the grammatical surface of our language in order to uncover and reveal its profound and hidden syntax. This systematical exposure would mean the automatic suspension of metaphysics from the domain of legitimate discourse. The revisited Philosophy's task implies a revisited Philosopher's task. He should not elaborate on scientific works, but should search for the maximum of clarity and understanding in the domains that we already have. The Philosopher should not have to produce new propositions, but engage himself in clarifying already existent propositions and their context.

I believe a motto from the *Tractatus* could be glossed in this way: When we have to prospect for something precious at great depths, we need to create useful tools, and not the oil or gold itself. Russell has viewed the *Tractatus* from a different perspective:

"A logically perfect language has rules of syntax which prevent nonsense, and has single symbols which always have a definite and unique meaning. Mr. Wittgenstein is concerned with the conditions for a logically perfect language ____ not that any language is logically perfect, or that we believe ourselves capable, here and now, of constructing a logically perfect language, but that the whole function of language is to have meaning, and it only fulfills this function in proportion as it approaches to the ideal language which we postulate." (Russell, *Introduction*, p.8).

The first criticism to Russell's introduction, beyond Wittgenstein's notorious threat of refusing the publication of his own book if it were to be published with his supervisor's introduction⁴, came from Ramsey's famous review (1923). He was one of the first translators of the *Tractatus* into English and one of Wittgenstein's main partners in debate over the ideas of his youth. Although mild, Ramsey was already critical of Russell's introduction, affirming: "It is possible that he is not an infallible guide to Mr. Wittgenstein's meaning" (p.465). The question of the search for a perfect logical language seems to Ramsey:

"[a] very doubtful generalization; there are, indeed, passages in which Mr. Wittgenstein is explicitly concerned with a logically perfect, and not with any language, e.g., the discussion of "logical syntax" in 3.325ff.; but in general he seems to maintain that his doctrines apply to ordinary languages in spite of the appearance of the contrary (see especially 4.002). This is obviously an important point, for this wider application greatly increases the interest and diminishes the plausibility of any thesis such as that which Mr. Russell declares to be perhaps the most fundamental in Mr. Wittgenstein's theory". (Ramsey, p. 465)

This problem dissolves itself when we think about the difference between our current language and a notation which must be able to mirror or capture its logical syntax. Wittgenstein's intention in the *Tractatus* was not about creating gold (perfect language), as Russell seems to have thought when he read it, but

⁴ Cf. Letter to Russell, Tagebücher 14-16, p. 132.

about creating a more perspicuous instrument (a perspicuous notation) to bring this gold to the surface, without surprises and mistakes and without positive philosophical doctrines. These are always understood as misunderstandings or linguistic confusions. This is indeed a hallmark trait – featuring continuously throughout Wittgenstein's Philosophy: a ruthless negative diagnosis against all traditional Philosophy.

Marion seems to agree with Ramsey's criticism of Russell:

"Contrary to what Russell believed and stated in his introduction, Wittgenstein was not concerned in the TLP with the condition which would have to be fulfilled by a logically perfect language. According to him, ordinary language was in perfect logical order. He was rather trying to unravel the underlying logic that every language, including ordinary language, must possess in order for it to be able to provide pictures of the world. So, while Russell being concerned with a logically perfect language and having essentially in mind its application to mathematics, could have dismissed the above objections as irrelevant, Wittgenstein saw the attempt at subsuming many diverse forms under one general "logical form" as seriously flawed." (Marion, p.120)⁵

In a certain sense, Wittgenstein indeed takes part in a philosophical tradition, as he tries to build up a notational system that could bring clarity to the propositions that we use in our linguistic activities in order to avoid any philosophical confusion. From this perspective, Philosophy can be imagined like the mythological hydra with thousands of heads, each of which, if cut off, will give birth to many others, in an explosion of criteria, variables, concepts, models and theories about everything and everyone. Each new parameter would unavoidably generate numerous others. Such as in a true discussion between a deaf and a mute, where the interlocutors don't know with whom, nor for or against whom, or even which tools they can use, to say something. In light of this, we can see that Wittgenstein's aim in the *Tractatus* was not to create a perfect language, but to show how perfect the inner functionality of our current language already is. As Wittgenstein explicitly affirms:

"Alle Sätze unsere Umgangssprache sind tatsächlich, so wie sie sind, logisch vollkommen geordnet.___ Jenes Einfachste, was wir hier angeben sollen, ist nicht ein Gleichnis der Wahrheit, sondern die volle Wahrheit selbst. (Unsere Probleme sind nicht abstrakt, sondern vielleicht die konkretesten, die es gibt). 5.5563.

⁵ It is interesting to note that Marion (1998) and Kienzler (1997) do not quote or even mention each other in their works, maybe because they were published almost simultaneously. Nonetheless, they share the position that there is indeed a rupture in Wittgenstein's Philosophy, not a continuum, and that to understand it, without turning out Wittgenstein into two – or even more -- different and incommunicable authors, we have to concentrate ourselves in the middle period of his development.

Before being viewed like completely lost gold, this alleged logic of our language could somehow be seen as potentially to be rebuilt via the vestiges of natural languages, or as gold to be constructed via the help of some scientific methods. However, it should be ultimately seen as lying at profound depths from which to be prospected by means of sophisticated logical tools. The philosopher, according to Wittgenstein in his tractarian phase, would be a language prospector and not a builder of theories about things. The search for a perfect notational means represents the search for a radical and transparent medium, a mirror of the things, opaque to the naked eye, but made transparent with the proper tools. On this particular point, this tractarian period was largely about a notational means that could respect or bring clarity to the logical multiplicity of things. This notation could positively express or follow, through its combinatorial possibilities, the articulatory possibilities of things. Conversely, it should prohibit symbolic combinations which would not correspond to possible articulations of things. In this way, we would need such a notational system to undress our current language, because "die Sprache verkleidet den Gedanken". (4.002)

In "Some Remarks" - Wittgenstein's official return to Philosophy written in 1929 and deeply influenced by the *Tractatus* - we still clearly have the analogy between representation and projection, wherein the image systematically distorts what it represents. It seems that representation necessarily means a kind of distortion of what is represented. This is the price to be paid for the daily functionality of our language. But it does not protect us from metaphysical exaggerations. In order to protect ourselves, we have to undress language; to dig down into it, or to rescue it, or sublimate it, from such distortions. These are all distinct analogies which point to the common idea of a hidden ground to be brought to daylight through a logical analysis of language. The abandonment of this image of prospect is the definitive abandonment of *Tractatus* as a project. This begins, without doubt, with the refusal of the logical independence of elementary propositions.

It is important to highlight that the logic of language "did not need to be built". Where we have an understanding of a propositional sense, of any articulation or of any complexes, we already have language or syntax, and therefore we have already logic, thinks the young Wittgenstein. We then need to learn how to correctly "read", or "recognize" the logical space of facts, and its exhaustive horizon of possibilities, and not to re-write it. This movement, from the actuality of something towards the acknowledgment of its possibilities (denoting a necessary insertion in a logical complex) represents, as I hold in this work, the holistic movement itself. This also justifies the mystical tractarian view concerning logic. Logic means there the recognition of a combinatorial horizon, the grasp of a space of possibilities.

Logic in *Tractatus* is then not something external to the world which manages or organizes things from outside. It is constitutive of the facts. Logic is a condition to any fact being a fact, to any complex being organized and not only a pile of things. This is the reasoning for logic being held as necessary or, as in the *Tractatus*, transcendental. It is just as if logic would organize reality from inside. How can something so abstract have such a broad application? Sometimes it seems that logical normativity transcends language, overflowing itself over the world, filling up everything that exists. Wittgenstein's youth was deeply influenced by the search for a kind of transparent medium which could silently and systematically reveal the deep logic of our language, avoiding in this way Philosophy in its positive and traditional form. As Wittgenstein maintained:

According to this perspective, traditional Philosophy is fundamentally compounded by misunderstandings of the inner logic of our language, namely: either (i.) erecting theses where we could just exhibit them (as in the case of solipsism), or (ii.) duplicating language by making it talk about itself, and to get out of itself (as in semantics where we try to say that "a" is the name of a), or (iii.) demanding necessity in a description (such as "There are objects"), or (iv.) asking questions where we cannot ask (such as in the case of skepticism), or (v.) making categorical mistakes (such as in "das Gute ist weniger identisch als das Schöne"), or (vi.) mixing up different uses of words (in the case of ambiguities or synonyms), or (vii.) failing in the denotation of, or in the contact with, the reality, just as a more perspicuous analysis could reveal, as 6.53 maintains:

[&]quot;Die meisten Sätze und Fragen, Welche über philosophische Dinge geschrieben worden sind, sind nicht falsch, sondern unsinnig. Wir können daher Fragen dieser Art überhaupt nicht beantworten, sondern nur ihre Unsinnigkeit feststellen. Die meisten Fragen und Sätze der Philosophen beruhen darauf, dass wir unsere Sprachlogik nicht verstehen. (...)" 4.003

"Die richtige Methode der Philosophie wäre eigentlich die: Nichts zu sagen, als was sich sagen lässt, also Sätze der Naturwissenschaft __ also etwas, was mit Philosophie nichts zu tun hat __, und dann immer, wenn ein anderer etwas Metaphysisches sagen wollte, ihm nachzuweisen, dass er gewissen Zeichen in seinen Sätzen keine Bedeutung gegeben hat. Diese Methode wäre für den anderen unbefriedigend __ er hätte nicht das Gefühl, dass wir ihn Philosophie lehrten __ aber sie wäre die einzig streng richtige." 6.53.

While Kant tried to determine the limits of reason by means of an internal analysis of its capabilities, Wittgenstein tried, through the austere beauty of the biblical-oracular *Tractatus*, to trace down the articulatory limits of our language by means of the very same language. These are distinct critical paths, but with the same requirement of internal investigation and with the same result: radical disbelief in the legitimacy of any metaphysical discourse. Consequently, Philosophy allegedly does not call for new pieces of information or discoveries, but it does demand greater clarity with the deep syntax of our language. Giving us, as a result, perspicuity, precision, conceptual clarity, for a clean discourse free of confusions, sanitized from misunderstandings.

In the *Tractatus* we have seven knots: (i.) world and ontology; (ii.) facts and states of affairs; (iii.) logical representation; (iv.) thought and *Bildkonzeption*; (v.) logic, truth-functionality, Satz⁶ and language; (vi.) propositional form and logical analysis of language; (vii.) ethics, ineffability and silence. These points show that Philosophy should engage itself with comprehension and clarity, and not with knowledge production. Following an intuitive motto by which we face general problems of confusion in our lives: we do not need to have new things, but to rearrange better what we already have. To bring organization to a confused domain does not mean bringing something new to it. It may mean, rather, the opposite, i.e. cutting off some things. And it will always represent a rearrangement of what we already have.

This deflationary spirit is already clearly exposed and defended in the preface to PB, where Wittgenstein affirms that we must not bring new elements to the discussion, thereby adding complexity to things that are already confused, but,

⁶ It is interesting to note that Wittgenstein chose "der Satz" as the first possible title for the work of his youth. *Satz* brings a health ambiguity to discussions on understanding the *Tractatus:* it would comprehend both the truth-functional formation of propositions and the idea itself of a model touching the reality, or put simply, set against the reality. *Satz* is a male substantive that comes from the verb *setzen*. The precise meaning of which is to put, to set, to sit, to seat. To Wittgenstein in this period, a proposition is exactly *etwas gesetzt*, a fact set against another fact in reality. From there come its sense and importance.

rather, that we must pursue clarity and perspicuity in order to get a better view on what we already have. This is clearly, an overall spirit of his entire Philosophy. Wittgenstein's way of facing problems contrasts with the way the tradition usually faces them.

"Dies Buch ist für solche geschrieben, die seinem Geist freundlich gegenüberstehen. Dieser Geist ist ein anderer als der des großen Stromes der europäischen und amerikanischen Zivilisation, in dem wir alle stehen. Dieser äußert sich in einem Fortschritt, in einem Bauen immer größerer und komplizierterer Strukturen, jener andere in einem Streben nach Klarheit und Durchsichtigkeit welcher Strukturen immer. Dieser will die Welt durch ihre Peripherie – in ihrer Mannigfaltigkeit – erfassen, jener in ihrem Zentrum – ihrem Wesen. Daher reiht dieser ein Gebilde an das andere, steigt quasi von Stufe zu Stufe immer weiter, während jener dort bleibt, wo er ist, und immer dasselbe erfassen will. (...)" (In the preface of PB)

In this way, a revisited Philosophy would come to fulfill the role of correcting distortions and abuses of language, not only in order to clarify theses and thoughts but also to sublimate the noises of our confusions into a harmonic music. This would leave the obligatory space of what really matters intact and immaculate, thought the young Wittgenstein. The space of orthodox Philosophy begins to wane with the central tractarian distinction between *sagen* and *zeigen* until the no-space of the final, radical and desperate silence. "Und es ist nicht verwunderlich, dass die tiefsten Probleme eigentlich keine Probleme sind." 4.003. Or even: "Wir fühlen, dass, selbst wenn alle möglichen wissenschaftlichen Fragen beantwortet sind, unsere Lebensprobleme noch gar nicht berührt sind. Freilich bleibt dann eben keine Frage mehr: und eben dies ist die Antwort" 6.52.

It seems problematic to demand a square to be round without losing its inherent properties and conformations. The wings of a bird allow it to reach the highest clouds but make it difficult for it to manipulate stones on the ground. In this sense, it is precisely because language legitimately expresses empirical senses that it is inept at expressing other senses, ethics and/or aesthetics. It seems intuitive to think that the nature of something allows it some functionality. However, this very same nature simultaneously restricts some other possible functions, precisely because it makes some possible. To permit something means not permitting another. It seems awkward to the young Wittgenstein to simply mention a possibility of the rational discourses comporting higher senses or values. We cannot demand from Philosophy what it cannot give us. The hallmark of a truly intellectual sobriety and lucidity is the contemplation of the limits of our resources. The hallmark of a responsible investigation in Philosophy, one that turns out to be the paradigm of the analytical tradition, is the awareness of the limitation of our cognitive, linguistic, and logical capabilities.

But there is a problem: in principle, can we really resolve all the tasks presented in the Tractatus? There are at least two interesting possible criticisms of the Tractatus. We can examine it externally through the eyes of Wittgenstein's mature Philosophy, namely by concentrating ourselves on the Philosophischen Untersuchungen (1951). In this way, we can try to investigate the extent to which Wittgenstein's problematic presuppositions and methods led him to the collapse of the project of his youth. For example, it would be important here to draw in doubt the pictorial nature of language, its rigid compositionality, or even its logical atomism, its compulsory demand for the exactness of our concepts or even the necessity of a strict determination of the propositional sense. In Tractatus there are two clearly complementary levels to the composition of the legitimate propositional sense, namely: a sub-propositional responsible for the elementary propositional sense determination (Bildkonzeption), and a propositional level itself, responsible for the composition of all possible complexities through an elementary basis. The Bildkonzeption clearly determines the compositionality. However, having problems with the compositionality, especially with the application of logic, we also have to revise the *Bildkonzeption*. Compositionality and Bildkonzeption complement each other necessarily, in such way that a revision of one entails the revision of the other. The compositionality explains the montage of complex propositions, while the Bildkonzeption explains their determined bipolar character.

The second way of criticizing the *Tractatus*, which I seek to present here, corresponds to an internal critique of the Philosophy of Wittgenstein's youth. This strategy enables one to have a more precise vision of what was happening internally with *Tractatus'* conceptual architecture. It also leads to making the external critique more natural. In this way, we can investigate the continuity or concordance of topics throughout Wittgenstein's Philosophy, in spite of (or precisely because of) the later attempt to resolve internal problems found in the Philosophy of his youth. Moreover, we can clarify the richness of context and internal indications within Wittgenstein's work. I believe that before we have a clear rupture in his Philosophy we have a natural development of some themes

through a continuous debate of conceptual and logical problems with decisive contrasts. There is no doubt, that a rupture is the natural consequence of the failure in executing the project of the application of logic. This seems to have already been anticipated in the rubrics presented in 2.0251. In this way, Bento Neto articulates these rubrics with problems carried out since 1929: Space, infinity and numbers; colors, logical independence; and time and a hypothetical and physicalist discourse.

"In this way, the project of constitution of a phenomenological language, or of a phenomenological analysis of the "visual space" and similar themes, to them Wittgenstein intends to dedicate himself, in 1929, when he comes back to the philosophical work, is a strictly tractarian project. This does not mean obviously that he could not have "changed his mind" during the years of philosophical leisure about some topics in *Tractatus*, maybe by a external influence (like the read of Brower or by conversations with Ramsey about the *Tractatus*), but just that his self-imposed project need not to be accessed through the recognition of any "novelty"." (Bento Neto, p. 50-51).

For example, by analyzing the article *Some Remarks* more carefully we can see indeed that we have some not-to-be-overseen novelties that are completely odd with the *Tractatus*. However, I do not entirely agree with Bento Neto when he says: "We have, consequently beyond other possible theoretical changes in Wittgenstein, that the application of logic to space, to colors, to time, leads us to three different collisions between logic and its application." p. 54. I base my criticisms on a different aspect of these collisions. I believe that these three different problems could be reduced to one basis, or into a common problem, and I feel that doing so makes the investigation more productive. This common problem lies not only on the bet that elementary propositions must be constituted by names in the end of the analysis, but also on the paradigm of complete analysis itself, or on the call for a logical language prospect as presented in the tractarian phase of Wittgenstein's thought up until 1931.

In fact, throughout this work I will argue that these problems (with space, time and colors) are not only interdependent, but they arise from two common presuppositions: the complete analysis paradigm and the logical independence of the elementary proposition. The abandonment of these paradigms is incorporated into a determinate image of our language's operation, thus representing the end of the tractarian project.

Consequently, we will not focus ourselves on the ruptures in Wittgenstein's ideas as a priority, but we will look at their organic development as caused by the internal inertia of their problems. The investigation of this transition in Wittgenstein's work is often excessively contaminated by the use of arguments and ideas from his mature Philosophy, which prevents us from seeing the naturalness of this movement. Clearly we have contrasts here, but we can see them through an internally continuous discussion and the constancy and concordance of some perspectives and metaphors.

Mathieu Marion seems to hold the same view:

"One thing, however, needs to change. As pointed out, only some of Wittgenstein's later works had been published in the 1950s: the Philosophical Investigations in 1953, the *Remarks on the Foundations of Mathematics* in 1956, and *the Blue and Brown Books* in 1958. In postwar Oxford in particular, this editorial policy led to the development of interpretations where the later Wittgenstein, with his strategic affinities with ordinary language Philosophy, was favorably contrasted with the earlier Wittgenstein, who was seen to be going in the (terribly wrong) direction of logical positivism. Thus a distorting emphasis was put on Wittgenstein II versus Wittgenstein I; and between the two great philosophies there seems to have been that gray zone called the "transitional" period, which was considered not to contain any idea worth a closer look. Such prejudices are still very strong today, especially among those whose ideas about Wittgenstein were formed in the 1950's (...) hardly anyone tried to find out what it was exactly in his earlier view that he was reacting against or how his arguments took shape: it is as if Wittgenstein had a conversion." (p. ix)

In a certain way in this work, I try to examine the beginning of this "conversion" when Wittgenstein himself tried to expurgate the tractarian sins. Marion continues in the preface of his book: "How can one pretend to understand Wittgenstein's later conversion if one does not even understand what the TLP is all about? Or if one does not even pay attention to the transitional writings where Wittgenstein's own arguments against his former self are formed?" (p. x.). For this, we try to accept Wittgenstein's concepts and projects that the *Tractatus* presupposes, in order to provide an internal explanation of its collapse⁷, namely: the conflict between the complete analysis of empirical propositions, which he called the logic application (3.25) and the demand for a logical independence among the elementary propositions (5.134). This conflict is known as the famous

⁷ This is not about saving the *Tractatus*, it is about perspicuously understanding what was done there, just as with trying to understand the spirit that has guided a condemned sentenced to death. I do not intend to judge it as either correct or incorrect. Moreover, I know that it is wrong, that the suspect has declared himself as guilty. I agree with the common verdict, including the reasons commonly alluded to, but I intend to understand the condemned's reasons, his strategies and procedures beyond the consequences of his acts.

problem of the exclusion of colors (6.3751). We can not have the logical product of any two primitive propositions, because we cannot make the logical product of, for example, two propositions which ascribe two different colors to a same visual point. The ascription of colors or of any degree in a quality scale seems to bring the problem to different fields - extra-logical ones, in principle - or to bring it to a rich mosaic of empirical concepts and of analytical linkages. In this way this problem seems to appeal essentially to truths about exclusions, which are traditionally accepted as synthetic or empirical ones and, at least not as logical ones, such as: "two bodies cannot simultaneously occupy the same spatial point" and "a single body cannot be in two distinct points simultaneously". This empirical intrusion in the allegedly neutral terrain of logic will be explored in more detail in the fourth chapter of this thesis.

This appeal to an empirical or phenomenal reality begins to appear in: "It is of course a deficiency of our notation that it does not prevent the formation of such nonsensical constructions, and a perfect notation will have to exclude such structures by definite rules of syntax" (*Some Remarks*, p.171) The notation in question was the truth table or *W-F-Notation* or *Schema*, as Wittgenstein called it. The absurd construction was the conjunction of empirical propositions, which ascribe two different degrees to a single quality. Such propositions cannot be true together but can be false together. The contrariety of certain empirical arrangements cannot be expressed in compositional terms. This is a clear contrast to the thought expressed in the *Tractatus*. These propositions would indeed be elementary, though they exclude each other.

In the case of ascribing different colors to a particular visual or spatial point we can clearly see that one line in the attempt to connect two of these propositions must have been excluded *a priori*. The line about the true conjunction of these propositions _ that represents the possibility of the two being true together _ must be crossed out, not due to its falsity, but due to its absurdity. The distinction between falsity and absurdity plays a relevant role here. The truth table notation has no sensibility to prevent certain absurdities or nonsense. Either show it as a simple falsity or as a contradiction, which belongs to the symbolism. That comes from the restricted horizon of concatenation possibilities among color propositions. The truth table notation is a too permissive or democratic representational means of logical connections. We can also understand that this truth table to be limited, not only in respect of colors or banned conjunctions, but also in terms of object lengths and other implications and exclusions of some combinatorial possibilities to be expected in the truth tables. Some constructions has to be *ad hoc* prohibited. This appears in the example taken from discussions in the Vienna Circle:

"Eine bestimmte Beschreibung sieht so aus: Eine Länge ist 25 m. Eine Unbestimmte Beschreibung wäre: Eine Länge liegt zwischen 20 und 30 m. Nun werden diese beiden Beschreibungen "p" und "q". dann ist durch die Syntax der Worte "Länge" festgesetzt, dass unmöglich der erste Satz wahr und der zweite falsch sein kann, d.h. "p.~q" ist unerlaubt." (p.91 WWK)

Another line in the truth table, which represents a combinatorial possibility, does not "see" a special arrangement of propositions. And it can be no accident that these two examples here are precisely about colors and numbers, or in other words, about measurements. We will come back to this point in the first chapter of this work.

The paragraph about the tractarian notation's limitations is the beginning of *Tractatus'* epithets at the end of the article *Some Remarks* from 1929. This paper begins to recognize that not only all the problems were not solved but, furthermore, they were never to be solved according to the terms proposed in the *Tractatus*. Although the attempt to revisit and to improve it still seems clear and open as an attempt to coin another notation which could withstand nonsense and could mirror the deep rules of our language. But this time, the notation would not guide the analysis; rather, it would be a result of it: "Such rules [of syntax], however, cannot be laid down until we have actually reached the ultimate analysis of the phenomena in question. This, as we all know, has not yet been achieved." (p.171.)

The article *Some Remarks*, just as with the discussions with the members of the Wiener Kreis (WWK) and the agglomerated thesis in the *Philosophischen Bemerkungen* (PB) organized for the obtainment of a scholarship in 1930 are important documents for they show Wittgenstein's problems by this time with some ground points in *Tractatus*. However, Brian McGuinness' observation from his preface to WWK has to be kept in mind:

"Trotz all dem haben wir hier doch nicht Wittgenstein direkte Äußerung, sondern nur Waismanns Bericht davon mit der Ausnahme von den hier nichtgedruckten Abschriften von Manuskripten. Offenbar konnte er dem Ideengang nicht immer folgen und ließ Dinge, die Wittgenstein für besonderes wichtig hielt, aus. Wenn wir überdies in Betracht ziehen, dass selbst die Äußerungen nicht Wittgensteins durchdachte und mehr oder weniger zur Veröffentlichung vorbereitete Ansichten wie die PhB waren, dann werden wir wohl einsehen, dass dieses Notizen nur mit allergrößter Vorsicht als eine Bekundung der Anschauungen Wittgensteins angesehen werden dürfen: sie müssen eher als ein etwaiger Kommentar über den TLP und die PhB angesehen und wo immer möglich mit diesen verglichen und an diesen geprüft werden." (McGuinness, p.30)

If we need more definitive texts, more elaborate and complete ones, written in the transitional Philosophy beginning we must indeed concentrate on WWK, PB and *Some Remarks*, and not on the raw speculative and sometimes *unübersichtlich* jungle in the *Nachlass*, which represents a work that's often rough and in draft form. I intend then to restrict myself to the more finished products of his Philosophy. These are more refined and reviewed than "works" that were neither intended to be final pieces nor to be presented to a public, precisely because were unsatisfactory.

I believe that *Some Remarks*, WWK and PB can sufficiently show us the process of overcoming internal problems and saving the tractarian project, and how some improvements and changes were necessary. In these works, we can see that these repairs in the *Tractatus* led Wittgenstein to the reconstruction of his Philosophy of Logic, among other things. This fact is shown indirectly in the centrality of the Logic in *Tractatus*. It is as if a hole in the hull of his work brought the ship to its wreckage. The idea here is to show how the truth table was a (false!) bet that must have effected or at least must have guided this ideal of a purely neutral, combinatorial and syntactic logic. A "new logic" had to ultimately consider what was going on in the world, its *Wie*, and not only its *Was* (cf. 5.551, 5.557). The truth-functional analysis had to be completed with the analysis of the constituents of elementary propositions, which could not contain only names – a fact which explicitly contradicts the *Tractatus* (cf 4.22, 5.55): "Falsch war an meiner Auffassung, dass sich die Syntax der logischen Konstanten aufstellen lasse, ohne auf den inneren Zusammenhang der Sätze zu achten" (WWK, p.74).

This repair would also lead to modifications in the tractarian Philosophy of Mathematics: numbers would no longer vanish in a correct analysis. A more perspicuous analysis of the ascription of degrees to qualities would show that we would need numbers inside the elementary propositions to properly express their logical multiplicity and the interdependence of their elements. The Mathematics had to be changed because the Logic had to be changed:

"The occurrence of numbers in the forms of atomic propositions is, in my opinion, not merely a feature of a special symbolism, but an essential and, consequently, unavoidable feature of the representation. And numbers will have to enter these forms when – as we should say in ordinary language – we are dealing with things which admit of gradation, i.e., properties as the length of an interval, the pitch of a tone, the brightness or redness of a shade of color, etc. It is a characteristic of these properties that one degree of them excludes any other." (*Some Remarks*, p.167).

In this way it is explained how an elementary proposition can exclude or imply another.

"Jeder Satz liegt in einem Satzsystem, das wie ein Maßstab an die Wirklichkeit angelegt wird. (logischer Raum). Das, was ich das erste Mal gar nicht beachtet hatte, war dies, dass die Syntax der logischen Konstanten nur einen Teil einer umfassenden Syntax Bildet. So kann ich z.B. das logische Produkt p.q nur dann Bilden, wenn p und q dieselbe Koordinate nicht zweimal bestimmen." (WWK, p. 76).

It is interesting to note that all the discourse of this period is marked by: "what I did not notice, perceive, note at that time". It makes us believe that the project was not only difficult, but also that, in principle, it could not be accomplished, because some important logical points were not properly worked out. If Wittgenstein had gone on with his project in its details⁸, he would have recognized, as he did thereafter, that the project could not have been executed on such terms⁹.

⁸ It is interesting to note that the *Tractatus* indeed begins to collapse in its details. This work agrees with this common idea that constantly appears in the secondary literature.

That is at least in the level of the complete analysis of complex propositions. This strong truth functionality doctrine has to be completed by the Bildkonzeption, which operates in the formation of elementary propositions, in order to complete the metaphysics of the symbolism of the Tractatus. Wittgenstein's "bet" in Tractatus is that the thesis of truth-functionality and the Bildkonzeption are essentially complementary. Here we can clearly see the hybridism of ancestry in the basis of his first book, namely: a truth-functional doctrine à la Frege and Russell, and a Bilder doutricne a la Hertz and Boltzmann. Wittgenstein's originality lies in the articulation of these two traditions in a (key) system which intends, through its generality, to carry out a critical spirit in order to determinate what is legitimate, and what is not, in the propositional expression of facts of the world. An investigation of the Bildkonzeption will appear later in this work. In later texts of Wittgenstein (in his return to Philosophy in 1929) the demand for elementary propositions being exclusively composed by names - a direct consequence of his Bildkonzeption - is abandoned precisely because the truth-functional paradigm, incorporated in the notation of the truth table, was insufficient to express all possible senses. In this way, the changes in the thesis about the truth-functionality demand changes in the Bildkonzeption. There are two moments here for tractarian symbolism metaphysics: the sense determination, and the truth determination. The relationship has to be asymmetric: in order to have truth we have to have sense, but we do not need truth to have sense. We can calculate with truth conditions or sense. The sense of elementary propositions is not determined by truth-functionality, only the sense of complex propositions. The elementary propositions would be truth functions of themselves.