

## MUSS LOGIK FÜR SICH SELBER SORGEN? ON LOGICAL PARADIGM OF EXCLUSIONS BY CONTRARIETY AND THE EXPLOSION OF ALTERNATIVES AS PROBLEMS TO THE NEUTRALITY OF LOGIC

Marcos Silva\*

Wenn das Auge die Farbe erblickt, so wird es gleich in Tätigkeit gesetzt, und es ist seiner Natur gemäß, auf der Stelle eine andre, so unbewusst als notwendig, hervorzubringen, welche mit der gegebenen die Totalität des ganzen Farbenkreises enthält. Eine einzelne Farbe erregt in dem Auge durch eine spezifische Empfindung das Streben nach Allgemeinheit. Um nun diese Totalität gewahr zu werden, um sich selbst zu befriedigen, sucht es neben jedem farbigen Raum einen farblosen, um die geforderte Farbe an demselben hervorzubringen.

(GOETHE, *Farbenlehre*, 1810)

### Abstract

A new logical approach to the Color Exclusion Problem is proposed here. This is based on the limitation of the tractarian logic to cope with some special kind of conceptual organizations. This kind of organization unveil the paradigm of exclusions by contrarities, which entails, as I call it, an explosion of alternatives. For it I discuss the strong holism presented in the headings “Anti-Husserl”, “Die Welt ist rot” and “Liegt jeder Satz in einem System?” in Wittgenstein’s discussion with the Vienna Circle: a proposition has to be embedded in a system for we can understand all its possible negations and implications.

**Keywords:** Tractatus. Wittgenstein. Logic. Color exclusion problem. Holism. Contrarities.

---

\* Doutor em Filosofia pela Pontifícia Universidade Católica do Rio de Janeiro (PUC-RIO). Professor no curso de Filosofia da Universidade Federal de Alagoas (UFAL). Bolsista FUNCAP/CAPES de Pós-doutoramento. *E-mail:* marcosilvarj@gmail.com

## Resumo

Uma nova abordagem lógica para o Problema da Exclusão das Cores é proposta aqui. Esta é baseada na limitação da lógica tractariana em dar conta de alguns tipos especiais de organizações conceituais. Este tipo de organização revela um paradigma de exclusões por contrariedade que acarreta o que eu chamo aqui de explosão de alternativas. Para tanto, discuto o forte holismo presente nas entradas “Anti-Husserl”, “Die Welt ist rot” e “Liegt jeder Satz in einem System?” nas discussões de Wittgenstein com o Círculo de Viena: uma proposição deve estar inserida em um sistema para que possamos entender todas as suas negações e implicações possíveis.

**Palavras-chave:** Tractatus. Wittgenstein. Lógica. Problema da exclusão das cores. Holismo. Contrariedade.

### The tractarian project and the beginning of its end<sup>1</sup>

The *Tractatus* 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 gram-

---

<sup>1</sup> An early version of this paper was orally presented in the 14<sup>th</sup> Congress of Logic, Methodology, and Philosophy of Science (CLMPS) in 2011, in Nancy, France. Here I use Tractatus for *Tractatus Logico-philosophicus*, PB for *Philosophische Bemerkungen*, WWK for *Wittgenstein und der Wiener Kreis* and Some Remarks for *Some Remarks on Logical Form*. All the decimals numbers in the text comes from the Tractatus.

tical 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.

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 held as the price to be paid for the daily functionality of our language. But it does not protect us from metaphysical exaggerations. This was Wittgenstein's image of language and logic in his youth. In order to protect ourselves from philosophical absurdities, 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 "logical excavation" is the definitive abandonment of *Tractatus* as a project (see 4.003 and Silva 2012).

Before that, we must however acknowledge a problem: in principle, can we really resolve all the tasks presented in the *Tractatus* with purely tractarian means? 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* (1953). 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.

The second way of criticizing the *Tractatus*, 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 (without anachronism). 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 (arguably, a methodological one<sup>2</sup>), we have a natural development of some themes through a continuous debate of former 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. It is important here to emphasize that this (methodological) rupture is a *consequence* of this process of revising the tractarian project after the recognition of some limitations and not the *cause* of this mandatory revision.

Those limitations should have already been anticipated at the time of elaborating the *Tractatus*, for instance, in the rubrics presented in 2.0251. These problems (with space, time and colors) are not only interdependent, but they arise from two common presuppositions: i) the complete analysis paradigm and ii) the logical independence of the elementary proposition. This conflict is known as the famous problem of the exclusion of colors (6.3751): How can we express, for instance, the entailment "If a point in the visual field is red, then it cannot be blue" with formal tautologies? Or how can we interpret the exclusion "a point in the visual field is both red and blue" with contradictions? In what follows, I will defend that the abandonment of these paradigms (i and ii), which are incorporated in a peculiar and misleading image of our language's operation, represents the end of the tractarian project. This is a consequence of Wittgenstein had overlooked the distinction between exclusions by contradiction and distinctions by contraries at the time he was advocating his logical atomism.

---

<sup>2</sup> This methodological rupture is defended, for instance, by Hacker 1986, Hintikka and Hintikka 1986, Hilmy 1987, and Kienzler 1997, among others. My criticism about this kind of approach is due to my difficult in accepting that the change of Wittgenstein's thought has begun with a so general enterprise as the change of his philosophical method of analysis. This is rather a consequence than a cause of his Philosophy changes. Another crucial point: Some of Wittgenstein's way-outs to the Color Exclusion Problem (1929-30) are poor, in my opinion, because he did not recognize the need for distinguishing contraries from contradictions. I strongly refuse that this Color Exclusion Problem is a Wittgensteinian one. This a pervasive problem with philosophical history, which puzzled other influential authors as well. I cannot really understand why no one ever associated this sort of problem with the distinction contrary and contradiction, Wittgenstein himself included. This "Wittgensteinian scholarship" is totally blind in relation to the discussion about logical relations captured by the square of opposition.

## Rediscovering the color exclusion problem

We cannot 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 appeals 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”.

Viewed rigorously, the truth table’s compositionality as a pattern for logical analysis was found to be insufficiently comprehensive for the (too) ambitious project of 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. No empirical quality can have two or more degrees simultaneously. This ascription problem is a general case of the *Color Exclusion Problem*. No visual point can both be totally green and red. This *a priori* prohibition shows that there are indeed logical constructions that do not appeal to total 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. Although “The visual point *a* is totally green” and “The visual point *a* is totally red” make sense the conjunction between the both sentence doesn’t make sense. The same would happen with any ascription of degrees to empirical qualities, such as temperature, volume, length, weight, etc. The proposition “This table is three meters long” can either be analysed as “This table is one meter long, one meter long and one meter long”. It would mean trivially that the table would be one meter long. Nor as “This table is one meter long and two meters long”, which would be a clear nonsense.

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 (for further discussion, see Silva 2012).

The bipolarity 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. Expression 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, and not by contradiction. 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 the passage 5.513.

The *Color Exclusion Problem* points to a larger logical problem: the expressiveness of contrary propositions, elementary propositions which cannot be true together, but false. This makes us revise the extent to which logic must be more holistic sensitive to some indeed empirical arrangements, although not contingent ones. In fact, the conceptual arrangement of colors seems to carry or bring logic into the empirical world. Moreover, when we understand a proposition about colors, for instance, we have to presuppose the knowledge of all colors. This represents a holistic challenge to the truth functional approach to language<sup>3</sup>.

---

<sup>3</sup> For a discussion towards the tension between holism and truth-functionality in the *Trac-*

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 (of a truth table) 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 ruled out, not due to its falsity, but due to its absurdity. The distinction between falsity and absurdity plays a decisive role here. The truth table notation has no sensibility to prevent certain absurdities or nonsense (compare it with 3.325). 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, because it is based on purely combinatorial procedure in distributing truth values. 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).

---

*tatus* is to be found in Silva 2013a. This conflict was overlooked by Wittgenstein as he acknowledges in the chapter VIII of PB.

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.

The paragraph about the tractarian notation’s limitations, at the end of the article *Some Remarks* from 1929, is the beginning of *Tractatus’* epithets. 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 WWK and the agglomerated thesis in the 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*.

*Some Remarks*, WWK and PB can sufficiently show us the process of overcoming internal problems and attempt of 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 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 and limited by 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).



## Anti-husserl

The syntactical possibility of the denial of any legitimate proposition makes Wittgenstein think of systems of propositions such as that of colors. As is clear from the discussions *Anti-Husserl* of the WWK, if I understand that “*a* is green” I must be able to understand also “*a* is not green”, and this implies or brings the whole system of colors with the exclusion by contrariety, “it is not green, so it may be red, yellow, blue ... “. If *a* is a point of the visual field, it must have a color, even if I do not know which color that is. The proposition “*a* cannot be green and red” has to be understood differently from the proposition “*a* is green”. For the denial of the first proposition is not possible due to a grammatical demand, as Wittgenstein defends in this discussion. In this sense, the urge for a synthetic *a priori* judgments, held for example in a *Phenomenology a la Husserl*, is taken by Wittgenstein as a merely verbal way-out. We only have two kind of propositions, the empirical ones and the grammatical (logical) ones, without the need for a third possibility, for the last ones guide normatively the horizon of the former.

On the other side, although the denial of “*a* is green” is possible, it brings us a explosion of (colors) alternatives, which does not fit the two possible alternatives in the tractarian horizon: concatenation and non-concatenation of elements. This combination of the possibility of negation with the need to make all propositions belong to systems becomes clear in the following argument organized in a section entitled *Liegt jeder in einem Satz System?* in the WWK. This passage appears immediately after a commentary by Waissman which states that the possibility of the negation presupposes, or brings with it, a logical space of possibilities. In this period, Wittgenstein suggests that this collapses and fragments itself into the notion of various propositional systems:

Es kommt darauf hinaus, ob das Zeichen “a” ein notwendiges Zeichen ist. Wenn es bloß den Satz “ $\varphi a$ ” gäbe, aber nicht “ $\varphi b$ ”, so wäre die Erwähnung von “a” überflüssig. Es würde genügen, “ $\varphi$ ” allein zu schreiben. Der Satz wäre also nicht zusammengesetzt. Das Wesentliche am Satz ist aber, dass er ein Bild ist und Zusammensetzung hat. Soll also “ $\varphi a$ ” ein Satz sein, so muss es auch eine Satz “ $\varphi b$ ” geben, d.h. Die Argumente von “ $\varphi()$ ” Bilden ein System. (...) Setzt aber “ $\varphi a$ ”

auch “ $\psi a$ ” voraus? Jawohl. Denn dieselbe Überlegung lehrt: Gäbe es zu “ $a$ ” nur eine einzige Funktion “ $\phi$ ”, so wäre sie überflüssige; man könnte sie weglassen. Das Satzzeichen wäre also einfach und nicht zusammengesetzt. Er Bildet nicht ab. Zeichen, die entbehrlich sind, haben keine Bedeutung. Überflüssige Zeichen bezeichnen nichts.” Ergebnis: So viele Konstanten in einem Satz vorkommen, in so viele Dimensionen ist ein Satz variierbar. So viele Dimensionen hat der Raum, in dem der Satz liegt. Der Satz durchgreift den ganzen logischen Raum. Sonst wäre die Negation nicht verständlich (WWK, p. 90-91).

The arguments used here to a certain extent presuppose the metaphysic of symbolism in the *Tractatus* and its peculiar reading of Occam’s lema (cf. 3.328 e 5.47321). Waismann points this out when summarising Wittgenstein’s theses at the end of WWK:

Und so verhält es sich mit jedem sinnvoll gebrauchten Zeichen. Kommt das Zeichen “ $a$ ” in dem Satz “ $fa$ ” vor, so setzt das schon andere Sätze dieser Art, z.B. Den Satz “ $fb$ ” voraus. Denn wenn es bloß den Sachverhalt  $fa$  gäbe, aber nicht den Sachverhalt  $fb$ , so wäre die Erwähnung von “ $a$ ” überflüssige und überflüssige Zeichen bedeuten nichts. Dies zeigt, das jeder Satz in einem System von Sätzen liegt. (WWK, p. 261).<sup>4</sup>

Only by including  $p$  in a system of propositions can we cope with this explosion of contrarities by understanding the negation of a proposition about colors or length, for example. The price to pay is that every negative proposition will generate an indefinite explosion of contrarities - not only in the case of ascriptions of degrees<sup>5</sup> but in all propositions somehow. For

---

<sup>4</sup> See Silva 2012 for further discussion about what I call here holism in understanding the tractarian period, including the intermediate phase in the last chapter of this study. There the exegetical protagonism will be given to the passage 3.42 and not to the Occam motto; because the holism advocated is found more naturally in 3.42. But, although it is possible to take a holistic approach to the Occam motto, we need more interpretive steps because it is not straightforward.

<sup>5</sup> The idea of different degrees of exclusion within and among systems is introduced and explored in Silva 2013b.

instance, we have to think a kind of system of propositions about “ownership” as comprising of all the possible individuals of a domain in order to go from “This is not mine” to “this belongs to Mary or John or Louis etc.” In another example, in order to imply “John is reading” from “John is not swimming”, we have to think about a kind of system of propositions covering John’s alternatives of actions. We need, for example, to assume that John is always doing something, to make “John does not go jogging” refer indirectly to “John swims”, “John reads” etc., i.e., all such propositions are contrary to “John goes jogging.” As in the classic case of colors, these propositions cannot be true together, but they can be false together. And while the elementary propositions are meaningful, the junction of them is not. While the statements “John reads” and “John swims” are by themselves meaningful, the conjunction “John reads and swims” is not (supposing, of course, that these activities are indeed exclusive). Similarly, while both statements “point *a* is blue” and “point *a* is red” are by themselves meaningful, the conjunction of both is not.

The accent of the difference should be in the fragmentation of logical space: previously absolute, yet it has now many competitors. As in the PB 86 and in the heading “Anti-Husserl” in the discussions in the WWK, “I have no pain” places us in the framework of a “ruler of pain”, where having pain is one of its dashes. The proposition determines one of these dashes and requires the entire ruler. „„Schmerzen” heißt sozusagen der ganze Maßstab und nicht einer seiner Teilstriche. Dass er auf einem bestimmten Teilstrich steht, ist nur durch einen Satz auszudrücken.” More generally: The tractarian paradigm of substitution (*Vertretung*) does not disappear, but must be refined in the direction of the logical complexity required to actually be able to represent facts or phenomena.

## **Die welt ist rot**

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 logical question. This discussion can be read under the rubric *Die Welt ist rot* presented in WWK. 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 maintain 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 linguistic presuppositions of such a statement. 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:

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).

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 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 durchgreift 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. “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 the police, perhaps). Moreover “reaching” 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. We may extend this feature to all propositions as we try to defend holism as a more adequate interpretation of this phase of Wittgenstein’s thought, as indicated by the discussions going on WWK. This notion of 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<sup>6</sup>. 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.

For example, the secondary literature presents the *Color Exclusion Problem* in the passage 6.3751, when we cannot sublimate the kind of exclusion of a color system with the crude tractarian logic of tautologies and contradictions. 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 *Color Exclusion Problem* is already prepared in the tractarian ontology as well (see Silva 2011 and 2013a). 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

---

<sup>6</sup> Soutif 2013 and Silva 2013a acknowledge and discuss this tension too. Although they use different approaches, their results are compatible.

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 degrees 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.

## Conclusion

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:

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 Wirk-

lichkeit 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 affairs 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 a problem with the expressiveness 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 general, 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.

## References

HACKER, P. *Insight and illusion: themes in the Philosophy of Wittgenstein*. Oxford: Clarendon Press, 1986.

HILMY, S. S. *The later Wittgenstein. The emergence of a new philosophical method*. Oxford: Basil Blackwell, 1987.

HINTIKKA, M. B.; HINTIKKA, J. *Investigating Wittgenstein*. Oxford: Blackwell, 1986.

KIENZLER, W. *Wittgensteins Wende zu seiner Spätphilosophie, 1930-1932. Eine historische und systematische Darstellung*. Frankfurt am Main: Suhrkamp, 1997.

SILVA, M. Wittgenstein, cores e sistemas: aspectos lógico-notacionais do colapso do Tractatus. *Analytica*, Rio de Janeiro, v. 15 n. 2, p. 229-264, 2011.

\_\_\_\_\_. *Muss Logik für sich selber sorgen? On the Color Exclusion Problem, the truth table as a notation, the Bildkonzeption and the Neutrality of Logic in the Collapse and Abandonment of the Tractatus*. PhD Thesis. Rio de Janeiro: Pontificia Universidade Católica do Rio de Janeiro (PUC-Rio), 2012.

\_\_\_\_\_. Holismo e verofuncionalidade: sobre um conflito lógico-filosofico essencial. *Philosophos*, Goiânia, v. 18, n. 2, p. 167-200, Jul./Dez., 2013.

\_\_\_\_\_. On degrees of exclusion within and among systems. *Argumentos*, Fortaleza, ano 5, n. 10, p. 151-166, Jul./Dez. 2013b.

SOUTIF, L. Simplicity or singularity? Two conceptions of object in the Tractatus logico-philosophicus. *Revista Argumentos*, Fortaleza, n. 10, p. 97-110, 2013.

WITTGENSTEIN, L. *Philosophische Bemerkungen*. Werkausgabe Band 2. Frankfurt am Main: Suhrkamp, 1984.

\_\_\_\_\_. *Some Remarks on Logical Form*. Proceedings of the Aristotelian Society, Supplementary Volumes, Knowledge, Experience and Realism, Londres: Blackwell Publishing on behalf of The Aristotelian Society. 1929. p. 162-171. v. 9.

\_\_\_\_\_. *Tractatus Logico-philosophicus. Tagebücher 1914-16. Philosophische Untersuchungen*. Werkausgabe Band 1. Frankfurt am Main: Suhrkamp, 1984.

\_\_\_\_\_. *Wittgenstein und der Wiener Kreis*. Werkausgabe Band 3. Frankfurt am Main: Suhrkamp, 1984.

Data de registro: 19/06/2013

Data de aceite: 23/04/2014