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Some remarks on verificationism, constructivism and the Principle of Excluded Middle in the context of Colour Exclusion Problem

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Outline:

Introduction

I. Colour Exclusion Problem: An important setback in Logical Atomism

II. Some problems with the Principle of Excluded Middle (PEM)

Some conclusions so far!

INTRODUCTION

According to Porto and Pereira (2003), it is important to draw the distinction between two forms of verificationism: First, Vienna Circle and the “new verificationism” (Excluded Middle and Constructivism) in Philosophy of Language motivated by Dummett’s work.

Wrigley (1989) holds Wittgenstein’s verificationism at the beginning of the 30’s as "extreme", "radical", "dramatic". To understand the sense of a proposition, one has to understand its *method* of *verification*. Contrast it to TLP: truth conditions semantic! Some epistemology now?! But it was psychology in TLP?!

Question:
Why did Wittgenstein engage in (explicit) forms of constructivism at that moment?
I am looking for some *internal* (conceptual) *and historical reasons*.

Brouwer? (Newen 1994, Marion 1998, Kienzler 1997)
Vienna Circle?
TLP? (Wrigleys 1989)

Wrigley’s (non-conclusive) way-out: TLP pressuposes (or implies) verificationism.

I think Wrigley's hypothesis is very controversial.
Tractarian operators should respect a *realist* semantics (neutral, unlimited and combinatorial).

TLP has a realist account of sense based on the notion of truth conditions. (TLP 4.41, 4.431, 4.442, 4.45-4.461 and 4.463). There, propositional sense should be exhaustively and exclusively determined by its truth conditions. Verification seems to be irrelevant in this scenario! It means some epistemological intromission.

However:
After some setbacks, Wittgenstein noted that logical operators should be *topically sensitive* (PB 81-83).

We should *test*, *verify* the possibility of some propositional formation, since some complex propositions are not *allowed*. Some constructions should be *forbidden*. The free distribution of truth values should be restricted in some different systems.

I agree with Engelmann's (2013) remark about W's verificationism:

"a proposition is considered comparable to reality only if it can be, in principle, verified (...) the post-1929 equivalence of a proposition having sense and having a method of verification should be seen as response to the problems related to Ramsey's objection" p. 27

But, what objection is that?

I think there are some constructivist lessons to be learned in the context of Colour Exclusion Problem, especially lessons on the role of negation in taxonomic systems, and thick inferentiality.

My proposal:
I aiming at connecting Wittgenstein's problem in expressing conceptual relations among colours to some problems with the Principle of Middle Excluded (PEM) which arises in his phenomenological *Satzsysteme (holism)*, back in the very beginning of the 30's.

Some examples are systems of colors, temperature, volume, hardness, length, weight, height etc.

In all those "phenomenological systems", PEM does not hold. The reason for this failure of PEM among them is simple.

My point:
Sentences which ascribe a degree for an empirical quality or a colour for a visual point are clearly mutually exclusive, for they cannot be true together, but they are not contradictory because they can be false together. (Silva 2016a and Silva 2016b)

Part I

Colour Exclusion Problem: An important setback in the TLP

Colors as a logical problem! (motivated by Ramsey's criticism in 1923)

p.~p

The point *a* in the visual field is blue and the (same) point *a* is red (6.3751)
No point in the visual field can be both blue and red

The table over there is 3 meters long and the (same) table over there is 4 meters long
No object can be both 3 meters long and 4 meters long

Now is 25 degrees Celsius and now is 26 degrees Celsius
A particular moment cannot have two temperatures

Flamengo has lost yesterday and Flamengo has won yesterday
A soccer team cannot both lose and win simultaneously.

The animal over there is a cat and the (same) animal is a dog.
No animal can be both a cat and a dog.

Odd, isn't it!? If the conjunction is contradictory, the disjunction should be tautological!
Contrarieties! Material relations based on taxonomy and…
Rules! No law, axiom, principle, but "some sort of tautology" (SRLF 1929)
Let's try to capture the logical phenomenon of contrarieties with Tractarian notation!
(Wittgenstein 1929 e Von Wright 1996)

General leitmotif (Silva, 2017): *If* the logical organization of colors represents a problem for his logic, it should represent a problem for his notation too. Let's try to examine the distinction between contradiction and contrarieties using truth tables.

Truth table (1918) X Truth table (1929)

1918!

p	q	p.q
T	T	T
T	F	F
F	T	F
F	F	F

John is scientist	John is logician	John is scientist and John is logician
T	T	T
T	F	F
F	T	F
F	F	F

A is red	A is blue	A is red and A is blue
T	T	F
T	F	F
F	T	F
F	F	F

But, where are the negation and the contradiction? Is there a exclusion without negation? The tractarian answer: no! "But where?" In line with logicism:

1) A complex proposition has a unique logical form (here the contradiction);
2) It is hidden (not visible in its grammar);
3) It is very complex;
4) It must be discovered! (logic X application of logic!)

Truth table (1929)! Technically it is not a big deal, but it is philosophically momentous.
He keeps the Russelian idea of full analysis but talks about *adding up rules*.
At this time, the problem is 1) neither with the truth value in the last column (no falsehood, no null, but we have some nonsensical construction!) Note! The exclusion is not nonsensical, but its representation itself!; 2) nor with the connective "and" (WWK, p. 80), 3) nor with an exclusive disjunction, since an inclusive disjunction cannot be used either; 4) nor with color-system (WWK, p. 80). 5) Things as redish-green, or transparent white are not relevant here. **The problem is with the scheme itself, with the free distribution of truth values! The combinatorial procedure has to follow some *rules*. It has to be *contextually sensitive*.**

A is red	A is blue	A is red and A is blue
T	T	F
T	F	F
F	T	F
F	F	F

A is red A is 3m long Now it's 28° C hardness, volume, sound, ETC…	A is blue A is 4m long Now it's 29° C hardness, volume sound, ETC…
T	F
F	T
F	F

Some lines have to be ruled out, taken away, blocked, “mutilated”. (Mutilation, Von Wright 1996, Silva 2012 and 2016). Some combinations must be *ad hoc* blocked. To impose restriction of truth tables means to impose restrictions on truth functionality, extensionality and so other typical (classical) Tractarian features.

Dramatic turn! We must *add up* rules to restrict logical space. Accordingly, mutilations capture some other logical patterns, such as:

1) contrariety; 2) subcontrariety; 3) contradiction.

p	q
T	F
F	T
F	F

p	q
T	T
T	F
F	T

p	q
T	F
F	T

“the top line must disappear” “certain combinations of the T´s and F´s must be left out” (SRLF, p.170-1)
“Wegfall der ersten Linie” (WA I, p. 58)
“eine Reihe einfach durchstreichen, d.h. als unmöglich betrachten” (id.ib)
“ich muss die ganze obere Reihe durchstreichen” (id.ib)
“die ganze Linie ausstreichen” (id. p.59)
“die obere Linie streichen” (id.ib.)

II. Some problems with the Principle of Excluded Middle (PEM)

Back to the first question about some lines of constructivism in his return to Philosophy:

Some authors connect Middle Wittgenstein with constructivism because of Brouwer and/or Vienna Circle or even try to find in the TLP some constructive ideas (procedures and operations).

However, *Satzsysteme* are "materially thick", "inferentially dense". In a sense, in his phenomenological *Satzsysteme* (colors, temperature, volume, hardness, length, weight, height etc.), PEM does not hold!

Why??
That is simple.

Because the third (or middle term) is not excluded! (If we do accept that there are some phenomenology already in TLP, we must accept that we have some non-classical logic in the heart of TLP.)

Let's take a look at five arguments! The problem is very pervasive!

1)
For any p, p or its negation must be true. However, if “a is blue” really negates, denies, excludes “a is red”, then we must accept that both can be false together. That is, it is possible that none of them is actually true;

2)
Some mandatory indetermination, vagueness. Very little is known about the colour of a T-shirt or the length of a table if one states, for example, “my t-shirt is not green” or “that table is not 3 meters long”. If “a is red” is p, than not-p must not be “a is blue”. That “a” can have all other colours, infinite other colours, if we allow so. There is no “the contrariety” of a proposition.

3)
The meaning of ‘red’ can be conveyed by pointing to a red sample, but not by saying ‘no’ or gesturing disapprovally while pointing to a blue sample. In no dictionary there is a x over a sample of blue to define what red is.

4)
If we put in a list everyone who is bald and everyone who is not bald in another list, a person X must be in one of these two lists. But if we put every red object in a list and every green object in another list, an object X may be neither in the first nor in the second list.

5)
Here we have a certain kind of assymetry. Does the affirmative proposition say more than the negative? This special "negation" indetermines things; it introduces some indetermination. (Cf. 1994b, p.160 MS 106, p.55) Negation *cannot* be only a matter of commutator or switcher of truth conditions.

6)
On interesting asymmetries: Although the conjunction of, say, "a is red" and "a is blue" may be held as a contradiction, the disjunction of both is not a tautology, regardless of an inclusive or an exclusive disjunction.

Five conclusion(s):

1)

Neither Brouwer nor Vienna Circle. I offered an internal explanation for Wittgenstein's radical verificationism: the need to limit the Tractarian logic. *If* we have to (ad hoc) restrict the formation of molecular propositions, *if* the Tractarian operators are to be restricted in some systems, and *if* full extensionality is restricted in some cases, it is very important to *test*, *to verify* if a molecular proposition is *possible* or not. If it is *allowed* or not.

2)

There is no "normative" talk in TLP concerning logic. "prohibitions" and "authorizations"

3)

At least two modalities! A combinatorial one! And a "phenomenlogical" or material one. (Sellar's and Brandom's inferentialism?)

4)

Satzsysteme: *If* we do have elementary propositions, they should be all inserted in several different systems, which are logically organized through exclusions by *contrariety*, wherein *negation* "explodes" in several, if not in infinite alternatives. To operate propositions we should know the whole system in which the proposition is inserted to check which combinations are *allowed* or which are *prohibited*. (contrarieties only emerge where you have systems with more than two alternativities. Tractatus has this such a system. Articulation and non-articulation)

5)

Logical Holism (instead of logical atomism): No proposition is logically isolated. If you may analyze them to an end, this end will not have (logically) independent propositions anymore. They are actually dense in relations (numerous implications and exclusions). They are "inferentially thick". The reduction of the former to the later is just a (philosophical) illusion. The incompatibility here is persistent. We live in a (phenomenological) world of (primitive) oppositions.

Thanks for your attention!
Obrigado pela atencao!