

A. Pichler, S. Säätelä:  
*Introduction to Wittgenstein*

Lecture 3, 5.9.2023:

- The elementary proposition
- The molecular proposition
- Truth functions
- Nonsense and other problems of the *Tractatus*  
From the *Tractatus* to the later philosophy

# Repetition and outlook

- Philosophical problems come from being misled by the surface structure of our language.
  - Surface vs. depth structure. Cf. “The man saw the boy with the binoculars”, “The present king of France is bald” ...
- Philosophical problems are problems that have essentially to do with reference and sense.
  - Philosophy of *language*
- Sense and reference are found in the depth structure, not in the surface structure of language.
  - Philosophical problems are solved by attending to the depth = *logical* structure of language.
- Depth structure, language’s real structure is language as logically analyzed.
- Logical analysis and notation help to adequately capture sense and reference.
  - Not “Subject” and “Predicate”, but “Begriffsschrift”, Function, Logical operator (Connectives and quantifiers)  
...
- **My whole task consists in explaining the nature of the proposition.** (NB p. 39, 22.1.1915)
- → Picture theory: How shall we account for sense and reference? How does language, in its depth structure, represent the world? What is truth?

# Repetition and outlook

## Reference:

- For there to be reference, there must be simple and basic constituents in our language and thought that connect with the world, that refer to things in the world.
- In order to solve our philosophical problems, we need to separate, on the level of depth grammar, what has reference from what has not.

## Sense:

- Only propositions that can be true, but aren't *necessarily* true, can express a thought and say something about the world, and thus have *sense* (cf. tautologies).
- Only propositions that can be false, but aren't *necessarily* false, can express a thought and say something about the world, and thus have *sense* (cf. contradictions)
- I.e. only true-false ("bi-polar") propositions can say something about the world and have sense. Only propositions that contain parts with reference can be bi-polar, and therefore only propositions that contain parts with reference can have sense.

## Truth:

- The truth value (True / False) of an elementary proposition is determined by its picturing relation to the world.
- The (output) truth value / The validity of a molecular proposition is determined by (is a function of) the (input) truth values of the elementary propositions it is composed of.
- Which is the home of meaning, sense, reference, and truth in language? The elementary proposition.
- Which is the home of meaning, sense, reference, and truth in thinking? The thought ("Gedanke").
  - What is the thought? See TLP 4.

# Repetition and outlook

- The elementary proposition plays an indispensable role not only for the picture theory, but the entire *Tractatus* philosophy of language.
- The colour exclusion problem (and other problems) brings Wittgenstein to abandon the *Tractatus* notion of the elementary proposition.
- The abandonment of the elementary proposition brings with it the abandonment of the *Tractatus* account of
  - sense
  - reference
  - truth
  - necessity and impossibility ...

# The elementary proposition

# My whole task consists in explaining the nature of the proposition. (NB p. 39, 22.1.1915)

|  |   |
|--|---|
| Reality / World (Wirklichkeit / Welt)  | Language (Sprache)  |
| <p style="text-align: center;">o o o o o</p> <p>simple objects (<b>einfache Gegenstände</b>)</p>   | <p style="text-align: center;">o o o o o</p> <p>names (<b>einfache Zeichen, Namen</b>)</p>  |
| The name refers to the simple object, but only in the context of an elementary proposition.  |   |
| <p style="text-align: center;">oo</p> <p>(elementary) state of affairs / state / status rerum (<b>Sachverhalt</b>): a concatenation of simple objects</p>  | <p style="text-align: center;">oo</p> <p><b>elementary proposition (Elementarsatz, einfacher Satz)</b>: a concatenation of names</p>  |
| An elementary proposition has <i>sense</i> . If the state of affairs that is asserted by the elementary propositions obtains, then the elementary proposition is <i>true</i> , and the state of affairs a <i>fact (Tatsache)</i> . |   |
| <p style="text-align: center;">oo oo</p> <p>«It rains. My cat gets wet.»<br/>(molecular) state of affairs<br/>(<b>Sachlage?</b>)</p>   | <p style="text-align: center;">oo → oo</p> <p>«The state of affairs <i>It rains</i> implies the state of affairs <i>My cat gets wet.</i>»<br/>molecular proposition<br/>(<b>zusammengesetzter Satz</b>)</p> |

- Elementary propositions have sense (Frege).
- Elementary propositions don't have reference as such ( $\neq$  Frege).
  - It is only the simple name that refers (to the simple object).
- Elementary propositions are bi-polar.
- Elementary propositions are simple.
- Elementary propositions are logically independent of each other.
- The sense of an elementary proposition is 100% determinate.
  - Without 100% determinacy of sense, it is unclear which are the objects referred to (and, as a consequence, it cannot be decided whether the proposition is true or false).
  - The reference of a simple name is 100% determinate.
- It is only within the elementary proposition that the simple name refers to the simple object (Frege).

# The molecular proposition



# What is a *molecular proposition*?

- Through logical operators, a molecular proposition is built out of elementary propositions.
- Molecular propositions result from the logical operations that we perform on the elementary propositions.
  - The logical operators do *not* represent (and do not refer).
    - ≠ Frege and Russell who assume that there are «logische Gegenstände», and hence also have a different conception of logic
  - With molecular propositions we perform logical operations on our elementary pictures of the world.
- Logical connectives:  $\sim$ ,  $\&$ ,  $\vee$ ,  $\rightarrow$
- Examples of molecular sentences built with logical connectives:
  - "It rains and my cat is grey":  $p \& q$
  - "It rains or my cat is grey":  $p \vee q$
  - "(It rains) implies (My cat is grey)":  $p \rightarrow q$
  - "(It rains) implies (My cat gets wet)":  $p \rightarrow r$

# Logical connectives

| p | ~ | & | v | → |  | q |
|---|---|---|---|---|--|---|
| W |   |   |   |   |  | W |
| W |   |   |   |   |  | F |
| F |   |   |   |   |  | W |
| F |   |   |   |   |  | F |

# Truth and truth functions

# How can I find out whether an *elementary proposition* is true?

TLP 2.223:

- In order to discover whether the picture is true or false we must compare it with reality.

TLP 4.024:

- To understand a proposition\* means to know what is the case, if it is true.

\* E.g. “It rains” (= p)

How can I find out whether a molecular proposition (**operation**) is true (**valid**)?

p    ~

W    **F**

F    **W**

(1)   (2)

How can I find out whether a molecular operation is valid?

| p   | &   | q   |
|-----|-----|-----|
| W   | W   | W   |
| W   | F   | F   |
| F   | F   | W   |
| F   | F   | F   |
| (1) | (3) | (2) |

How can I find out whether a molecular operation is valid?

| p   | v   | q   |
|-----|-----|-----|
| W   | W   | W   |
| W   | W   | F   |
| F   | W   | W   |
| F   | F   | F   |
| (1) | (3) | (2) |

How can I find out whether a molecular operation is valid?

p → q

W W W

W F F

F W W

F W F

(1) (3) (2)



How can I find out whether a molecular operation is valid?

*Sheffer stroke*  $\sim(p \ \& \ q)$

| p   |     | q   |
|-----|-----|-----|
| W   | F   | W   |
| W   | W   | F   |
| F   | W   | W   |
| F   | W   | F   |
| (1) | (3) | (2) |

# N.B.:

The truth **table** method for establishing the truth / validity of a molecular proposition presupposes that the elementary propositions which it is composed of, indeed are *elementary propositions in the sense of the TLP*: i.e. that they are logically independent of each other; that their truth values can be assigned independently of each other; **that the truth value of one elementary proposition is True / False entirely independently of the truth value of another elementary proposition!**

# The colour exclusion problem

- Elementary propositions are simple.
  - Elementary propositions are bi-polar.
  - Elementary propositions are logically independent of each other.
  - The sense of an elementary proposition is 100% determinate.
  - But what if there are types of propositions for which it seems excluded that we reach a state of
    - Complete analysis
    - Complete simplicity
    - Complete determinacy of sense
    - Logical independence
- ?

# «Can you give me an example of an elementary proposition?»

- The *Tractatus* doesn't give examples of simple objects.
- The *Tractatus* doesn't give examples of simple names.
- The *Tractatus* doesn't give examples of elementary propositions.
- Our typical everyday language sentences are not like elementary propositions:
  - They are molecular rather than elementary propositions.
  - They are often not truth- and falsehood-capable (e.g. «Give me an apple!», «Hi!»).
  - They typically contain complex expressions referring to complex objects.
  - They are typically *not* logically independent of each other.
  - They sometimes don't seem to have much of an internal / depth structure (e.g. „Hi!“).
  - ...

# Does it makes sense to conceive of colour statements, and sense-data statements more generally, as elementary propositions?

- Sense-data statements:
  - «Here red»
  - «There green»
  - «This heavy»
  - «Here pain»
  - ...
- Do «Here red», «This heavy», «This is red», «This is green» ... (on depth analysis-level) consist of nothing but names that refer to simple objects? Is their sense 100% determinate? Are they bi-polar? Are they absolutely simple and independent of each other?

# *Tractatus: No*

## TLP 6.375

- Just as the only necessity that exists is *logical* necessity, so too the only impossibility that exists is *logical* impossibility.

## TLP 6.3751

- For example, the simultaneous presence of two colours at the same place in the visual field is impossible, in fact logically impossible, since **it is ruled out by the logical structure of colour.**
- Let us think how this contradiction appears in physics: more or less as follows – a particle cannot have two velocities at the same time; that is to say, it cannot be in two places at the same time; that is to say, particles that are in different places at the same time cannot be identical.
- (It is clear that **the logical product of two elementary propositions** can neither be a tautology nor a contradiction. **The statement that a point in the visual field has two different colours at the same time is a contradiction.**)

# The colour exclusion problem and its consequences

*Some Remarks on Logical Form*” and other writings from 1929-30

TLP: Elementary propositions are logically independent of each other.

- 1) The truth values of elementary propositions are, according to TLP, independent of each other.
- 2) Since colour statements can stand in a relation of mutual exclusion to each other, they are not independent of each other, and therefore, according to TLP, they cannot be elementary propositions.
- 3) Since colour statements cannot, according to TLP, be elementary propositions, they must be analysable into simpler propositions, and their analysis must eventually yield elementary propositions which *no longer* exclude each other (TLP #4.211, #6.3751).
- 4) If the analysis of colour statements into elementary propositions cannot be successfully achieved, we may want to recognize the colour statements themselves as elementary propositions - which would imply that we accept elementary propositions which *do* exclude each other.
- 5) Now, it seems indeed to be the case that colour statements cannot be analysed further into elementary propositions that do *not* exclude each other. Should we therefore just go for (4) and
  - a. *pace* TLP, conceive of the colour statements themselves as *elementary* propositions?
  - b. *pace* TLP, accept that there are elementary propositions that *do* exclude each other, and thus are *not* independent of each other!?
- 6) If there are some elementary propositions that are not independent of each other, we may just as well throw TLP's entire notion concept of elementary proposition overboard!!!!????



# Three TLP views are at stake

- If color statements cannot be analyzed further into statements that lead to elementary propositions which are logically independent of each other, and if we therefore consider these color statements themselves elementary propositions ...
  - Then at least some elementary propositions are mutually exclusive and not independent of each other!
- Three Tractatus views are at stake:
  - The *independency* view of elementary propositions
    - Elementary propositions can be mutually exclusive (“a is red” and “a is green” exclude each other for “phenomen(ologic)al” impossibility).
  - The view that elementary propositions are *simple*
    - Colour statements can be analyzed further into statements of colour degree, and propositions ascribing degree are not simple.
  - The view that logic “must take care of itself” (TLP #5.473)
    - We seem to need more than logical necessity / possibility only! Based on logical syntax / logical analysis alone we cannot show how color statements can exclude each other!
- The *Tractatus* conception of elementary propositions can just as well be given up!?

If we no longer have TLP's  
elementary propositions ...



A whole lot is being  
thrown over board!

# Consequences for accounting for sense, meaning and truth

Abandoning the logical independence view of elementary propositions means abandoning truth functionality!

| p | q | $\sim$ | $\&$ | $\vee$ | $\longrightarrow$ |
|---|---|--------|------|--------|-------------------|
| W | W | F      | W    | W      | W                 |
| W | F | W      | F    | W      | F                 |
| F | W | F      | F    | W      | W                 |
| F | F | F      | F    | F      | W                 |

# My whole task consists in explaining the nature of the proposition. (NB p. 39, 22.1.1915)

| Reality / World (Wirklichkeit / Welt)       | Language (Sprache)  |
|---|---|
| a group of states of affairs<br>(Sachlage?) | molecular proposition<br>(zusammengesetzter Satz)   |
| state of affairs<br>(Sachverhalt)           | elementary proposition<br>(Elementarsatz) [sense]   |
| fact<br>(Tatsache)                          | true elementary proposition<br>(wahrer Elementarsatz) [truth]   |
| simple object<br>(einfacher Gegenstand)     | name<br>(einfaches Zeichen, Name) [have<br>reference only in the context of an<br>elementary proposition] |

# Some other problems of the Tractatus

# Sloppiness?

„Sie schreiben nun: "Was einem Elementarsatze entspricht, wenn er wahr ist, ist das Bestehen eines Sachverhaltes". Hiermit erklären Sie nicht den Ausdruck "Sachverhalt", sonder[n] den ganzen Ausdruck, "das Bestehen eines Sachverhaltes". In einer Definition muss der erklärte Ausdruck immer als untrennbar Ganzes angesehen werden. ...“(Frege in a letter to Wittgenstein. In: Ludwig Wittgenstein: Gesamtbriefwechsel/ Complete Correspondence. Electronic Edition, 16.9.1919, IntelLex <http://pm.nlx.com>)

„Was nun Ihre eigene Schrift anbetrifft, so nehme ich gleich an dem ersten Satze Anstoss. Nicht, dass ich ihn für falsch hielte, sondern weil mir der Sinn unklar ist. "Die Welt **ist** alles, was der Fall ist". Das "ist" wird entweder als blosser Copula gebraucht, oder wie das Gleichheitszeichen in dem volleren Sinne von "ist dasselbe wie". Während das "ist" des Nebensatzes offenbar blosser Copula ist, kann ich das "ist" des Hauptsatzes nur in dem Sinne eines Gleichheitszeichens verstehen. Bis hier ist, glaube ich, kein Zweifel möglich. Aber ist die Gleichung als Definition zu verstehen? Das ist nicht so deutlich. Wollen sie sagen: "Ich will unter 'Welt' verstehen alles, was der Fall ist? Dann ist "die Welt" der erklärte Ausdruck, "alles was der Fall ist" der erklärende. In diesem Falle wird nichts damit behauptet von der Welt oder von dem, was der Fall ist, sondern, wenn etwas behauptet werden soll, so ist es etwas über den Sprachgebrauch des Schriftstellers. Ob und wie weit dieser etwa mit dem Sprachgebrauch des Lebens übereinstimme, ist eine Sache für sich, auf die aber für den Philosophen wenig ankommt, nachdem er seinen Sprachgebrauch einmal festgestellt hat. ...“(Frege in a letter to Wittgenstein. In: Ludwig Wittgenstein: Gesamtbriefwechsel/ Complete Correspondence. Electronic Edition, 3.4.1920, IntelLex <http://pm.nlx.com>)

# Science or art?

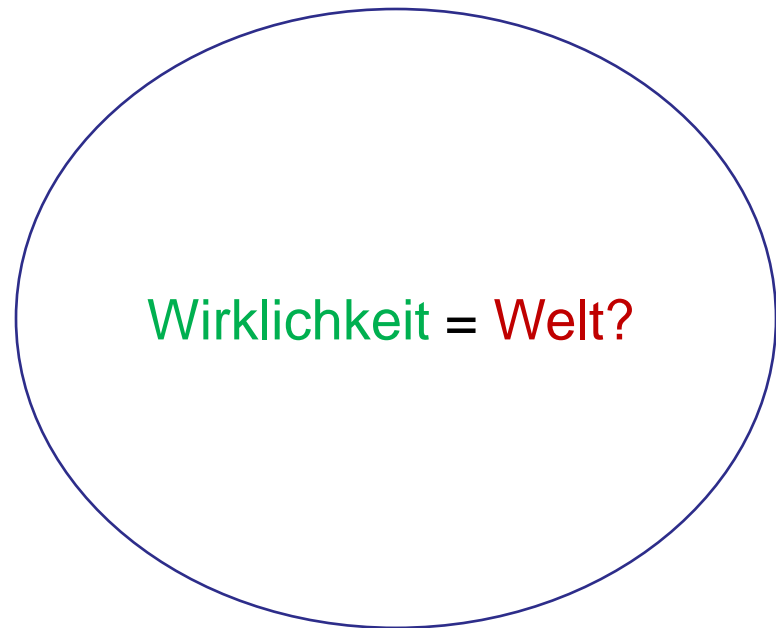
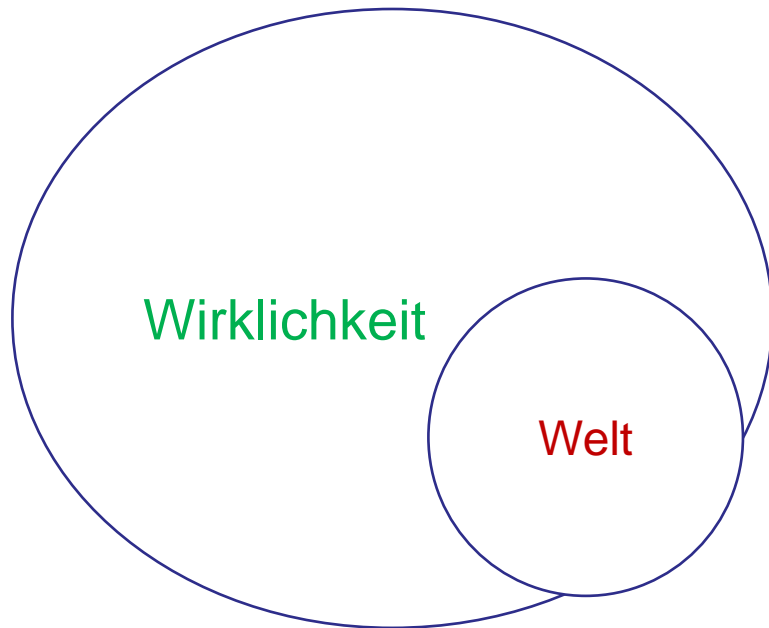
„Was Sie mir über den Zweck Ihres Buches schreiben, ist mir befremdlich. Danach kann er nur erreicht werden, wenn Andere die darin ausgedrückten Gedanken schon gedacht haben. Die Freude beim Lesen Ihres Buches kann also nicht mehr durch den schon bekannten Inhalt, sondern nur durch die Form erregt werden, in der sich etwa die Eigenart des Verfassers ausprägt. Dadurch wird das Buch eher eine künstlerische als eine wissenschaftliche Leistung; das, was darin gesagt wird, tritt zurück hinter das, wie es gesagt wird. Ich ging bei meinen Bemerkungen von der Annahme aus, Sie wollten einen neuen Inhalt mitteilen. Und dann wäre allerdings grösste Deutlichkeit grösste Schönheit.“ (Frege in a letter to Wittgenstein. In: Ludwig Wittgenstein: Gesamtbriefwechsel/ Complete Correspondence. Electronic Edition, 16.9.1919, IntelLex <http://pm.nlx.com>)



# Arrogance?

”I asked Wittgenstein whether, when he wrote the *Tractatus*, he had ever decided upon anything as an *example* of a 'simple object'. His reply was that at that time his thought had been that he was a *logician*; and that it was not his business, as a logician, to try to decide whether this thing or that was a simple thing or a complex thing, that being a purely *empirical* matter! It was clear that he regarded his former opinion as absurd.” (N. Malcolm, Ludwig Wittgenstein A Memoir, p.70)

# Inconsistencies?



TLP #1: The **world** is everything that is the case.

TLP #2.04: The totality of existent atomic facts is the **world**.

TLP #2.06: The existence and non-existence of atomic facts is the **reality**.

- «reality» = the obtaining states of affairs (= facts) + non-obtaining states of affairs?
- «world» = **a subset of reality**, namely facts only?

TLP #2.063: The total **reality** is the **world**.

- «world» = «(total) reality»? = the obtaining states of affairs (= facts) + non-obtaining states of affairs?

# Inconsistencies?

- Wittgenstein in a letter to Russell 19.8.1919:
  - **Sachverhalt is, what corresponds to an Elementarsatz if it is true.** [Isn't it *Tatsache* that corresponds to a true elementary proposition? And isn't *Sachverhalt* what corresponds to an Elementarsatz even if it is *false*?] See TLP #2: Was der Fall ist, die Tatsache, ist das **Bestehen** von Sachverhalten.
  - **Tatsache is what corresponds to the logical product of elementary props when this product is true.** [Isn't that a «*molecular*» Tatsache? And aren't there also Tatsachen that correspond to simple («atomic») propositions?]

# Nonsense?

Russell, in his preface to TLP, reg. “The sentences of philosophy are non-sensical”: “... Mr Wittgenstein manages to say a good deal about what cannot be said ...”

- Is the context-principle nonsense? (TLP 3.3 a.o.)
- Is the sign-symbol distinction nonsense? (TLP 3.32 a.o.)
- Are the notions of the elementary proposition and the truth table part of the ladder to be thrown away?
- What is it that we understand when (we feel that) we *understand* what the *Tractatus* says about ethics, logic, philosophy? According to the *Tractatus* account of understanding, there should be nothing to be understood?
  - Important nonsense vs. Plain nonsense
  - Cf. “Resolute readings” of the *Tractatus*

# Simple objects?

- "Real" (e.g. material particles of physics) or phenomenal (e.g. points in the visual field, objects of acquaintance)?
- "Things" only, or also properties and relations? If elementary propositions of the form " $a \in P$ " are to be possible, then simple objects have to include also properties?!
  - See Ms-102,147r[3] (date: 19150616): [Auch Relation und Eigenschaften etc. sind Gegenstände](#).

# Paradoxical?

- Only bi-polar sentences can express *thoughts*; thought = sentence with sense (*sinnvoller Satz*) (TLP 4)
- The sentences of the *Tractatus* are non-sensical. (TLP preface, TLP 6.54)
  - **The *Tractatus* cannot express thoughts.**
- The *Tractatus* expresses thoughts: Wenn diese Arbeit einen Wert hat, so besteht er in zweierlei. Erstens darin, daß in ihr Gedanken ausgedrückt sind, und dieser Wert wird umso größer sein, je besser die Gedanken ausgedrückt sind. (TLP preface)
  - **How can the *Tractatus* express thoughts if its sentences are non-sensical? Is there something like *partial* understanding, like half a thought?**
    - Cf. Idea of 100% determinacy of sense