Todays programme

- Background of the TLP
  - Frege
  - Russell

- Some problems in TLP
  - Saying and showing
    - Sense and nonsense
    - Logic
    - The limits of language

TLP, preface

How far my efforts agree with those of other philosophers I will not decide. Indeed what I have here written makes no claim to novelty in points of detail; and therefore I give no sources, because it is indifferent to me whether what I have thought has already been thought before me by another.

TLP, preface

I will only mention that to the great works of Frege and the writings of my friend Bertrand Russell I owe in large measure the stimulation of my thoughts.

Stimulation from Frege:

- The idea of a *Begriffsschrift*
- The idea of expressions a functions
- Frege's "three principles"
- The distinction between Sense and Reference (*Sinn und Bedeutung*)

Stimulation from Russell

- Russell's paradox and the theory of types
- Logical analysis and the problem of descriptions (philosophy as "critique of language", cf. TLP 4.0031)

The idea of logical analysis

- The linguistic form of a sentence often disguises the logical form of the proposition it can be used to express (cf. TLP 3.323-3.325; 4.002)

  – "The man saw the boy with the binoculars." (syntactical ambiguity)

  Every sentence expressing a thought (proposition) must have a determinate sense.

  The aim of the analysis is to reveal the logical grammar or syntax of a proposition.

Frege's "Begriffsschrift"

- Hence we need a suitable symbolism that precisely reflects logical structure and eliminates vagueness and ambiguity. Cf. *TLP* 3.325

- Frege calls his devised symbolism a *Begriffsschrift*, or concept script. In devising it (1879), he founded contemporary logic.

- The aim is to construct a universal, logically ideal language for the analysis and advancement of science and human knowledge (at least in all areas of "pure thinking" – mathematics and the foundations of natural science)

Frege's *Begriffsschrift*

- A *Begriffsschrift* should
  - show where one does not say anything (though one thinks one does)
  - show what one actually says (what one actually says may be different from what one thinks that one says)
  - provide a symbolism which permits to say what one wants to say clearly and precisely, and thus helps avoid misunderstandings and renders in a precise way logical distinctions that are blurred in ordinary language

Frege's *Begriffsschrift*

- A standard example of the functionality of a *Begriffsschrift* regards the use of "is" (TLP 3.323).
  - Cf. "Alois is diligent" vs. "2 times 2 is four" vs. "God is". Through the use of disambiguating logical language the three cases can be distinguished and the "is" can be rendered accordingly in different ways:
    - A ε D (copula, predication)   or   D*a*
    - 2*2=4 (sign of equality, identity)
    - Vx(x ε G) (existential quantification)   or   (∃x) Gx

Frege's three principles (1884)

"In the enquiry that follows, I have kept to three fundamental principles:

     always to separate sharply the psychological from the logical, the subjective from the objective;

     never to ask for the meaning of a word in isolation, but only in the context of a proposition;

     never to lose sight of the distinction between concept and object."

(In Introduction to *Grundlagen der Arithmetik*)

Frege: Expressions as <u>functions</u>

- *x + 1 = v*
  - x stands for an argument (e.g. *2* or *5*)
  - v stands for a value (e.g. *3* or *6*)
- *x + y + 1 = v* is a function with two arguments
- *the capital of x is v*
  - x stands for an argument (e.g. *Norway*)
  - v stands for a value (e.g. *Oslo*)
- The value of a sentence (understood as a function) is its *truth value*
  - The value of *Alois teaches philosophy* is the True (*das Wahre*)
  - The value of *2+2=5* is the False (*das Falsche*)

Frege: Expressions as <u>functions</u>

- In arithmetic, complex terms like '2^2' and '3 + 1' are formed with the help of 'incomplete expressions' such as the squaring function '( )^2' and the binary addition function '( )+( )'
- Similarly, a statement like "Alois teaches philosophy" can be analysed into two parts:

    'Alois'   and 'teaches philosophy'

- The second part is incomplete or «unsaturated»(i.e.contains an «empty place»)
- Only when this empty place is properly filled up, complete sense appears

- So, sentences express propositions, thoughts or judgments. It is these that can be true or false, not just bare signs.
- This is also a leading principle in the TLP, and lies behind, eg., the central distinction between sign and symbol.

- What about the following?
- "The 44th president of the United States is black."
- "The current president of the United States is black."
- In one respect, they seem to say the same thing, in another respect, not.

- Frege says that the two sentences have the same reference, but have two different senses.
- They express different thoughts, even though they both pick out the same individual (under current circumstances).

Frege on "Sinn" (sense) and "Bedeutung" (reference)

- Frege distinguishes between "Sinn" and "Bedeutung" of an expression (1892):
    - "Evening Star" and "Morning Star" have the same *Bedeutung* (namely the planet Venus) - but they have different *Sinn*

- (Mostly) equivalent distinctions:
    - Sinn vs. Bedeutung (Frege)
    - Sense vs. Reference (most common translation)
    - Sense vs. Nominatum (in some translations)
    - Bedeutung vs. Referenzgegenstand (standard German philosophical terminology)
    - Meaning vs. Denotation (Russell)
    - Intension vs. Extension (Carnap)
    - Meaning vs. Reference (Quine)

Frege on "Sinn" (sense) and "Bedeutung" (reference)

- The *Bedeutung* of a name is the object that the expression refers to.

- The *Sinn* of a name is the "mode of presentation" of the referent, or the cognitive content associated with the expression in virtue of which the reference is picked out.

"Ein Eigenname (Wort, Zeichen, Zeichenverbindung, Ausdruck) drückt aus seinen Sinn, bedeutet oder bezeichnet seine Bedeutung. Wir drücken mit einem Zeichen dessen Sinn aus und bezeichnen mit ihm dessen Bedeutung."

(Frege, SB 203)

- Frege uses "name" broadly, It is meant to to apply to any definite singular noun phrase — including both proper names ('Cicero', 'Plato') and definite descriptions ('the most famous Roman orator', 'the teacher of Aristotle').

- In fact he effectively regards every linguistic expression as a 'name'.

- So every expression for Frege has *Sinn* and *Bedeutung*

- "The Morning Star" and "the Evening Star" are two different modes of presenting the same object (the second planet from the sun).
- Thoughts, senses, or modes of presentation generally, are common intellectual property for Frege. Two people can grasp the same thought.

Sense and reference (and truth) of sentences

- Truth, reference and sense of sentences
  - "Context principle": "never ask for the *Bedeutung* of a word in isolation, but only in the context of a proposition"
  - "Principle of compositionality": The *Bedeutung* of a sentence is a function of the *Bedeutungen* of the expressions it is composed of
  - A conflict?

Sense and reference (and truth) of sentences

- The sense of a sentence is a thought (proposition) : Nonsensical sentences do not express thoughts

- The reference of a sentence is its truth value (a sentence which is true refers to the True)

- The truth value of a sentence is a function of the references of its parts

- To understand a sentence is to have grasped its truth-conditions

  – i.e. you must understand how the world must be in order for the sentence to be true.

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Problems with truth and reference of names

- Do proper names ("Alois Pichler") have both sense and reference?

- How to deal with "empty names" ("Pegasus", "Sherlock Holmes")?

- Can there be sense without reference?
  - "The greatest integer "; "Odysseus lived on Ithaca "

- What is the relation between names and "definite descriptions" (e.g. "the director of the Wittgenstein archives", "the teacher of Plato", "the current emperor of the USA")?

- Do functional symbols in logic (including connectives, negation, and quantifiers) have sense and reference?

Problems with truth and reference of sentences

- Truth, reference and sense of sentences
  - Can a sentence be true and still senseless?
  - Can a sentence be senseless and false?
  - Can it be that while parts of a sentence have reference and sense, the whole sentence does not make sense?
  - Can a sentence have sense but no reference?

- TLP attempts to solve these problems

Bertrand Russell (1872-1970)

- Revolt against British Idealism (with G.E. Moore)

- Discovered (1901) a contradiction in Frege's definition of "number" : Russell's paradox

- Solution: the Theory of Types

Differences from Frege:–

- a. Ostensive meaning (non-contextual)
- b. More psychologistic
- c. More empiricist
- d. Theory of Types: less universalist in logic in order to avoid Frege's contradiction (cf. *TLP* 3.331-3.334)

Russell's "theory of types" began with …

- Frege's definition of "number" in the *Grundlagen der Arithmetik* which presupposes that all classes must be capable of being members of other classes.
- The definition leads to a paradox which Russell points out in 1901: Does "the class of all classes which don't contain themselves as their own elements" contain itself as an element or not?
- Frege was devastated by this, because it means there is a contradiction in his system, and thus the whole idea of building mathematics upon logic is jeopardized
- Russell proposed his "theory of types" as a solution to the paradox

Other antinomies

- The Barber paradox:
  - The barber is a man in town who shaves those and only those men in town who do not shave themselves. **Who shaves the barber?**
- "This sentence is false"
  - Is it true or false?
- "I am always lying."
  - Always false?

Russell's solution: A "theory of types" (1908)

To solve the paradox, Russell develops the theory of types / of hierarchy of classes.

- There are principal differences of *type* between
    (A) Classes of individuals and
    (B) Classes of classes of individuals
  - The elements of (A) are individuals; the elements of (B) are classes. One must not mix the two and make a class an element of itself.

Russell's Theory of Descriptions (1905)

- A solution to Frege's problems with names and descriptions

- "The present king of Norway is bald." **True**

- "The present king of France is bald."
  - False or meaningless?

- "The present king of France" looks like it functions as a name in the sentence, but it is really a disguised existential claim.

Result of analysis:

$\exists x (Fx \,\&\, \forall y (Fy \rightarrow x=y) \,\&\, Gx)$

- – F: a is a king of France
- – G: a is bald

- So now we see that the original sentence is false, with no resort to anything tricky.
- The analysed prop SHOWS us what must be the case if the prop is to be true

- 4.0031 All philosophy is "Critique of language" […]. Russell's merit is to have shown that the apparent logical form of the proposition need not be its real form.

Presuppositions about logical analysis shared by Frege and Russell (but not W)

- logic is an essential framework of all thought, a system of maximally general truths (universalist conception of logic)
  - logic is conceived of as a science of objective laws of truth; laws of logic are distinguished from the laws of the special sciences only by their absolute generality

Presuppositions about logical analysis shared by Frege and Russell (and W)

- it must be possible to give a clear, completely explicit and unambiguous expression to the propositional contents judged true or false (otherwise we are dealing with nonsense)

Saying and Showing

W on the *Tractatus*:

The main point is the theory of what can be expressed (gesagt) by prop[osition]s – i.e. by language – (and, which come to the same, what can be *thought*) and what cannot be expressed by prop[osition]s, but only shown (gezeigt); which, I believe, is the cardinal problem of philosophy.

– Letter to Russell August 18th, 1919.

The preface again…

The book deals with the problems of philosophy and shows, as I believe, that the method of formulating these problems rests on the misunderstanding of the logic of our language. Its whole meaning could be summed up somewhat as follows: What can be said at all can be said clearly; and whereof one cannot speak thereof one must be silent. … the *truth* of the thoughts communicated here seems to me unassailable and definitive. I am, therefore, of the opinion that the problems have in essentials been finally solved. And if I am not mistaken in this, then the value of this work secondly consists in the fact that it shows how little has been done when these problems have been solved.

And again…

The book will, therefore, draw a limit to thinking, or rather—not to thinking, but to the expression of thoughts; for, in order to draw a limit to thinking we should have to be able to think both sides of this limit (we should therefore have to be able to think what cannot be thought).

The limit can, therefore, only be drawn in language and what lies on the other side of the limit will be simply nonsense.

Most of philosophy is simply nonsense

4.003 Most of the propositions and questions to be found in philosophical works are not false but nonsensical. Consequently we cannot give any answer to questions of this kind, but can only point out that they are nonsensical. Most of the propositions and questions of philosophers arise from our failure to understand the logic of our language.

Logical properties *show* themselves

Logical so-called propositions *shew* [the] logical properties of language and therefore of [the] Universe, but *say* nothing.

This means that by merely looking at them you can *see* these properties; whereas, in a proposition proper, you cannot see what is true by looking at it.

(Notes dictated to G. E. Moore in Norway, April 1914)

Logical properties *show* themselves

It is impossible to *say* what these properties are, because in order to do so, you would need a language, which hadn't got the properties in question, and it is impossible that this should be a *proper* language. Impossible to construct [an] illogical language.

(Notes dictated to G. E. Moore in Norway, April 1914)

Performative inconsistency?

Russell in his introduction to TLP:

"What causes hesitation is the fact that, after all, Mr. Wittgenstein manages to say a good deal about what cannot be said, thus suggesting to the sceptical reader that possibly there may be some loophole through a hierarchy of languages, or by some other exit."

Saying and showing: sense and nonsense

- Russell: Certain combinations of signs are to be excluded from language as "nonsensical", e.g. "The class of all humans is a human". The explanation / justification for this exclusion is provided for by the theory of types.

- Wittgenstein: Nonsensical combinations *are* already excluded from language, they are not possible. They may occur on the linguistic surface, but if we look at language's deep logical structure, we will see that the nonsensical combinations cannot occur there.

Saying and showing: sense and nonsense

– Thus, to try to exclude certain combinations of signs does not make sense: It amounts to trying to *say* that something is not possible which language (through logic) *shows* itself not to be possible.

5.4733 […] A *possible* sign must also be able to signify. Everything which is possible in logic is also permitted. ("Socrates is identical" means nothing because there is no property which is called "identical". The proposition is senseless because we have not made some arbitrary determination, not because the symbol is in itself unpermissible.)