Introduction to the Philosophy of Language

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Introduction

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- **Truth-Conditional Meaning Theory**
  
  “To understand a proposition means to know what is the case, if it is true. (One can therefore understand it without knowing whether it is true or not.) One understands it if one understands its constituent parts.” (Wittgenstein, *Tractatus logico-philosophicus*, 4.024)
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  "...symbols and mental states both have representational content. ... the main joint business of the philosophy of language and the philosophy of mind is the problem of representation. ... How can anything manage to be about anything; and why is it that only thoughts and symbols succeed?" (Fodor, Psychosemantics, 1987, p xi)
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This course will only cover truth-conditional approaches.
Course Overview

- **Session 1 Introduction**

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- *Session 1* Introduction
- *Session 2* Sense and Reference

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- Session 1 Introduction
- Session 2 Sense and Reference
- Session 3 Proper Names and Rigid Designation

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- Session 1 Introduction
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- Session 1 Introduction
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- Session 4 Propositional Attitudes
- Session 5 Speech Act Theory and Implicatures
- Session 6 Introduction to Formal Pragmatics

Essential Readings

Session 2: Reference

- Chapter 1 and 2 of Lycan (2000)
Essential Readings

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● Chapter 1 and 2 of Lycan (2000)

Session 3: Reference (continued)

● Searle (1958): *Proper Names.* Kripke (1972): *Naming and Necessity.* (excerpts)

● Chapter 3 and 4 of Lycan (2000)
Session 4: Propositional Attitudes

Essential Readings

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Session 5: Speech Act Theory and Implicatures

- Chapter 12 and 13 of Lycan (2000)
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Session 4: Propositional Attitudes


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Session 6: Introduction to Formal Pragmatics

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The Vienna Circle also has contacts to the Lvov–Warsaw school of polish logicians who are also working on logical analysis of natural language: Ajdukiewicz, Kotarbinski, Bochenski, Lesniewski, Tarski.
Historical Overview II

- Wittgenstein
- Frege (Jena)
- Lvov-Warsaw School
- Russell/ Moore (Cambridge)
- Vienna Circle
Historical Overview III
During the 3rd Reich, many philosophers—like millions of other people as well—were either killed by the nazis (e.g. Kurt Grelling †1941, Moritz Schlick †1936), not allowed to teach or participate in cultural life (e.g. Husserl, †1938), or were lucky to emigrate soon enough (e.g. Carnap).
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Richard Montague (a scholar of Tarski) introduces a way of mapping syntactic surface structures into a formal semantic representation (Montague Grammar), see e.g. “The Proper Treatment of Quantification in Ordinary English” (1970, first published in 1973).
Natural Languages
What is a Language?
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Languages can roughly be sorted into the following categories:

1. Natural Languages
   (a) Spoken Natural Languages: English, French, Tagalog, Warlpiri, Ewe
   (b) Extinct Natural Languages: Ancient Greek, Linear B, Sanskrit

2. Artificial Languages
   (a) Constructed Languages: Esperanto, Solresol, Nevbosh, Klingon
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- Natural Languages differ considerably from most artificial languages.
How many languages are there?

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- **Danish** Danish could be regarded as a variety of one Nordic language.
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Some Examples:

- **Danish** Danish could be regarded as a variety of one Nordic language.
- **Chinese** Speakers of different varieties of Chinese might not be able to understand each other at all.
Most commonly spoken languages

Ranking languages by their population, i.e. their number of native speakers, is less problematic, although controversial as well. Here is a top-ten compilation grabbed from the Web:

<table>
<thead>
<tr>
<th>Language</th>
<th>Population</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mandarin</td>
<td>1,075</td>
</tr>
<tr>
<td>English</td>
<td>514</td>
</tr>
<tr>
<td>Hindustani</td>
<td>496</td>
</tr>
<tr>
<td>Spanish</td>
<td>425</td>
</tr>
<tr>
<td>Russian</td>
<td>275</td>
</tr>
<tr>
<td>Arabic</td>
<td>256</td>
</tr>
<tr>
<td>Bengali</td>
<td>215</td>
</tr>
<tr>
<td>Portuguese</td>
<td>194</td>
</tr>
<tr>
<td>Malay</td>
<td>176</td>
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- With each language, a whole culture dies as well.
Morphological Classification

Languages can be classified according to their morphology, e.g. by the complexity of their derivation, inflection, or particle systems, the number of affixes, etc. The following four classes define a gradual scale.
Typology I

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- **Isolating / Analytic Languages**: Languages that only or mostly have words that can’t be changed, have almost no inflection. They often have rich particle systems instead, i.e. a lot of small separate words for marking case, tense, topic, etc. Examples: *Chinese*, *Vietnamese*
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- **Amalgamating / Polysynthetic Languages**: Languages that allow a vast number of morphemes to combine to very complex words such that a word might express what in other languages would be expressed by a sentence. Examples: *Inuktit, Mohawk*
**Typology II**

**Syntactical Classification by Word Order**

Languages may require or allow different ordering of subject, verb, and (direct) object. Here is a list with a few examples.

1. **SVO frequent**
   Examples: English, French, Danish, Chinese, Swahili (Tanzania)

2. **SOV frequent**
   Examples: German, Turkish, Japanese, Persian, Korean

3. **VSO rare**
   Examples: Gaelic (Ireland), Arabic, Welsh (UK)

4. **VOS rare**
   Examples: Mopán Maya (Belize), Bushi (Madagaskar), Fijian (Fiji)

5. **OSV extremely rare**
   Examples: Xavante (Brazil), [Yoda-talk—For those of you who have forgotten, Yoda is the little green Jedi knight from the movie *Star Wars*®. Yoda uses OSV word order for simple clauses with »be«, otherwise he uses VOSV(A) as in: »Drink milk I do, yes«]

6. **OVS extremely rare**
   Examples: Panare (Venezuela), Macushi (Guyana), [Klingon]
### Typology III

#### Classification by Case System

There are two basic ways in which languages assign case to subject and direct object of transitive verbs, affecting how they deal with passive sentences.

1. **Nominative-Accusative Languages.** Danish, English

<table>
<thead>
<tr>
<th>Type</th>
<th>Subject</th>
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</tr>
</thead>
<tbody>
<tr>
<td>transitive</td>
<td>NOM</td>
<td>ACC</td>
</tr>
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<td>NOM</td>
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2. **Absolutive-Ergative Languages.** Georgian (Caucasus), Dyirbal (Australia), Basque (Spain)

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<th>Type</th>
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Classification by Family Trees

This is a *genetic* classification, i.e. concerning the evolution of languages from common origins, thereby assuming a diachronic perspective.

Example of a Family Tree:
Note about the term ‘genetic’

Genetic argument: an argument regarding the evolution or acquisition of an object from some origin. In the philosophy of language it is usually an argument based on

- how a language can be learned

or an argument based on

- how a language has evolved from an earlier origin.
Introduction to the Philosophy of Language

Geographical Distribution

The World’s Language Families

- Afro-Asiatic
- Austronesian
- Australian-Aboriginal
- Amerind
- Caucasian
- Dravidian
- Eskimo-Aleut
- Indo-European
- Indo-Pacific
- Japanese
- Khoisan
- Korean
- Na-Dene
- Niger-Congo
- Nilo-Saharan
- Paleosiberian
- Sino-Tibetan
- Tai
- Uralic

Geographical Distribution

Introduction

History

Natural Languages

❖ What is a Language?
❖ How Many?
❖ How Many Speakers?
❖ Extinct Languages
❖ Typology I
❖ Typology II
❖ Typology III
❖ Genetic Classification
❖ Exkurs: ‘genetic’
❖ Geographical Distribution

Formal Languages

Comparison of Formal vs. Natural Languages

Common Problems in the Philosophy of Language

Overview - p. 21/41
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What are Formal Languages?
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- This process always involves some degree of idealization. Certain features of natural language are ignored, others are captured.
Here is a **Context-free Phrase Structure Grammar** (CPSG) for a fragment of **predicate logic**:

<table>
<thead>
<tr>
<th>Formula</th>
<th>→</th>
<th>Pred(Terms)</th>
<th>(Formula ∧ Formula)</th>
<th>¬ Formula</th>
<th>∃ Var Formula</th>
</tr>
</thead>
<tbody>
<tr>
<td>Terms</td>
<td>→</td>
<td>Const</td>
<td>Var</td>
<td>Terms, Terms</td>
<td></td>
</tr>
<tr>
<td>Const</td>
<td>→</td>
<td>Peter</td>
<td>Mary</td>
<td>John</td>
<td></td>
</tr>
<tr>
<td>Var</td>
<td>→</td>
<td>x</td>
<td>y</td>
<td>z</td>
<td></td>
</tr>
<tr>
<td>Pred</td>
<td>→</td>
<td>give</td>
<td>laugh</td>
<td>slap</td>
<td>love</td>
</tr>
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Here is a **Context-free Phrase Structure Grammar** (CPSG) for a fragment of **predicate logic**:

```
Formula → Pred(Terms) | (Formula ∧ Formula) | ¬ Formula | ∃ Var Formula
Terms → Const | Var | Terms, Terms
Const → Peter | Mary | John
Var → x | y | z
Pred → give | laugh | slap | love | hate | book
```

- This grammar specifies the set of strings that can be produced by starting with the *Formula* rule.
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Terms    →  Const | Var | Terms, Terms
Const    →  Peter | Mary | John
Var      →  x | y | z
Pred     →  give | laugh | slap | love | hate | book
```

- This grammar specifies the set of strings that can be produced by starting with the *Formula* rule.
- We assume that predicates like *give* or *laugh* take some fixed number of arguments (=have a fixed arity), although this is not specified by the grammar in the above form.
Here is an example of a **derivation tree** that corresponds to one specific derivation of a string in PL1.

Predicate Logic—Derivation Trees

Formal Languages

Here is an example of a **derivation tree** that corresponds to one specific derivation of a string in PL1.
Here are some examples of the strings produced:

(1) \( \text{laugh}(Peter) \)
(2) \( \text{hate}(John, Peter) \)
(3) \( \text{love}(Peter, Mary) \)
(4) \( \exists x \text{ love}(Peter) \)
(5) \( \exists x (\text{book}(x) \land \text{give}(Mary, Peter, x)) \)
(6) \( \text{book}(x, y, Peter, z, z, z, y, Mary, Mary, Peter) \)
(7) \( \text{hate}(John, John) \land \text{love}(John, John) \)
(8) \( \neg \exists x \exists y (\text{love}(x, y) \land \text{hate}(x, y)) \)
Predicate Logic—Sample Expressions

Here are some examples of the strings produced:

(1) \( \text{laugh}(\text{Peter}) \)
(2) \( \text{hate}(\text{John}, \text{Peter}) \)
(3) \( \text{love}(\text{Peter}, \text{Mary}) \)
(4) \( \exists x \text{ love}(\text{Peter}) \)
(5) \( \exists x (\text{book}(x) \land \text{give}(\text{Mary}, \text{Peter}, x)) \)
(6) \( \text{book}(x, y, \text{Peter}, z, z, z, y, \text{Mary}, \text{Mary}, \text{Peter}) \)
(7) \( (\text{hate}(\text{John}, \text{John}) \land \text{love}(\text{John}, \text{John})) \)
(8) \( \neg \exists x \exists y (\text{love}(x, y) \land \text{hate}(x, y)) \)

- Some formulas are not desirable because we already have some intended interpretation in mind.
- Using a CPSG for specifying the syntax, we’d need an extra rule for every \textit{arity} that predicates may have, i.e. the number of arguments they take. (That’s why we have just assumed that every predicate has a fixed arity.)
Predicate Logic—Revised Syntax

The syntax so far only specifies a finite fragment of predicate logic, given that every predicate has only a fixed arity as has been assumed. The following more abstract syntax specifies the whole predicate logic and uses a more common notation:

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<td>→</td>
<td>a</td>
<td>b</td>
<td>c</td>
<td>Const’</td>
</tr>
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<td>→</td>
<td>x</td>
<td>y</td>
<td>z</td>
<td>Var’</td>
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<tr>
<td>Pred</td>
<td>→</td>
<td>P</td>
<td>F</td>
<td>G</td>
<td>R</td>
</tr>
</tbody>
</table>

- Convention: Let’s write $P''$ as $P_2$, $P'''$ as $P_3$, and so on. (The same for variables $x_1, x_2, \ldots$ and constants $a_1, b_1 23, \ldots$)
- Let’s call this language first-order predicate logic (PL1).
**Predicate Logic—Semantics**

*Model for PL1.* A model $M = \langle D, I \rangle$ for PL1 consists of

- A non-empty set $D$ of individuals.
- An interpretation function $I$ such that . . .
  - $I(c) \in D$, for each constant $c$
  - $I(P) \subseteq D^n$, i.e. $D \times \cdots \times D$, for each predicate $P$ of arity $n$

*Assignment Function.* An assignment $g$ is a function from variables to elements in $D$.

*Term Interpretation.* Let $T_g(x)$ be a function from variables and constants to elements in $D$ with respect to an assignment $g$, such that . . .

- $T_g(t) = g(t)$ if $t$ is a variable, and
- $T_g(a) = I(a)$ if $a$ is a constant.

$x$-Variant. An assignment $h$ is an $x$-variant of an assignment $g$, if $h$ and $g$ agree in all places except possibly $x$. 
Predicate Logic—Truth in a Model

Truth in a Model. Truth in a model $M$ with respect to an assignment $g$ is defined by the following rules.

1. $M, g \models P(t_1, \ldots, t_n)$ iff $\langle T_g(t_1), \ldots, T_g(t_n) \rangle \in I(P)$
2. $M, g \models A \land B$ iff $M, g \models A$ and $M, g \models B$
3. $M, g \models \neg A$ iff it is not the case that $M, g \models A$
4. $M, g \models \exists v A$ iff there is an $v$-variant $h$ of $g$ such that $M, h \models A$
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**No Big Surprise.** PL1 involves idealizations of various kind. Here are just a few examples:

- Idealization: Truth does only depend on the assignment and model, not on other factors, like e.g. context, knowledge of the speakers, etc.
- Idealization: The conjunction is part of a normalized language. Special cases like e.g. asymmetric interpretations of »and« are ignored!
- Idealization: We can clearly decide of every elementary predication whether it is the case or not (no vague predicates).
Comparison of Formal vs. Natural Languages
Ideal Languages, Adequacy Criteria

Some important notions:

**Ideal Language**  An ideal language would be a language that eliminates all ‘deficiencies’ of natural language and is suitable for describing any aspect of the world.

**Descriptive Adequacy**  A scientific model is descriptively adequate iff it correctly describes the data that it is intended to describe. This implies that there are independent means of

- getting the data, and
- checking for the correctness of the description.

**Explanatory Adequacy**  A scientific model is explanatory adequate iff it is descriptively adequate and offers a satisfying explanation for the data.
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- In practically all philosophy of language, there’s a tension between an ideal language perspective and the goal of being descriptively and explanatory adequate.
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- To compare formal languages with natural languages, you need to take their interpretation into account.

- A formal language always ignores certain aspects of a natural language.

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- What one philosopher might regard as a deficiency of natural language that may be ignored, another philosopher might regard as an important aspect.

- In practically all philosophy of language, there’s a tension between an ideal language perspective and the goal of being descriptively and explanatory adequate.

- The question whether there is an ideal language is unsettled. (There is not even agreement on the logical system that should be chosen as a base.)
Common Problems in the Philosophy of Language

❖ Proper Names
❖ Singular Terms versus General Terms
❖ Existence Presuppositions
❖ Referential Opacity
❖ Semantic Internalism vs. Externalism
❖ Social Externalism
❖ Linguistic Universalism vs. Relativism
❖ Literal Meaning
Proper Names

(1) Jones is the murderer of Smith.
(2) Jones is Jones.
Proper Names

(1) Jones is the murderer of Smith.
(2) Jones is Jones.

● Why, how, and in what respect can (1) be informative, but not (2)?
Proper Names

(1) Jones is the murderer of Smith.
(2) Jones is Jones.

- Why, how, and in what respect can (1) be informative, but not (2)?
- What's the meaning of a proper name like »Jones«?
Singular Terms versus General Terms

(1) Cats are mammals.
(2) Peter is drunk.
Singular Terms versus General Terms

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• What's the difference between (1) and (2)?
Singular Terms versus General Terms

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• Could there be an ideal language
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(1) Cats are mammals.
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- What's the difference between (1) and (2)?
- Is the difference a fundamental one?
- Could there be an ideal language without any singular terms like »Peter«?
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(1) Cats are mammals.

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  - ... without any singular terms like »Peter«?
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Existence Presuppositions

(1) The present king of France is bald. (Russell 1905)

(2) Odysseus spent 6 years on an island with Kalypso.

(3) a. Nothing is better than a steak.
   b. A salad is better than nothing.
   c. Therefore, a salad is better than a steak.

(4) We make a bet.
   If you loose, you give me $5.
   If I loose, I’ll give you all the money I have in my pocket.
   Situation: My pocket is empty.
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● Did I cheat in (4)?
Referential Opacity

Quine (1956):

(1) Ralph believes that Ortcutt is a spy.
(2) Ralph believes that the man with the brown hat is a spy.
(3) Ortcutt is a spy.
(4) The man with the brown hat is a spy.
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- Question 3: Under which circumstances can we use (1) and (2) alike?
- Question 4: How does the meaning of (3) combine with the meaning of »Ralph believes« in (1), and likewise for (4) and (2)?
Putnam (1975), *Twin Earth*: Suppose there was a twin earth that is exactly like the earth except that water there consists of $XYZ$ instead of $H_2O$. Two speakers A and B could be in exactly the same physical state (except that one was partly composed of $XYZ$ and the other of $H_2O$) yet the one on earth would refer to $H_2O$ when he utters »water«, but the other one would refer to $XYZ$ when he utters »water«. Conclusion: The meaning of natural kind terms like »water« is not solely determined by the internal state of the speakers.
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- Therefore, the problem of semantic externalism versus semantic internalism is relatively independent from the traditional philosophical contrast between epistemic realism and anti-realism ($\approx$ idealism).
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- The validity of thought experiments like *Twin Earth* is still disputed, and there’s also a vast number of variations of this ‘experiment of thought’.
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- Therefore, the problem of semantic externalism versus semantic internalism is relatively independent from the traditional philosophical contrast between epistemic realism and anti-realism (≈idealism).
Social Externalism

Burge (1979):

- Scenario 1: A person thinks that he has arthritis for years, that arthritis in the wrists and fingers is more painful than in the ankles, and so on. One day he comes to believe that he has arthritis in the thigh. He visits the doctor, and the doctor tells him that you can’t have arthritis in the thigh, “since arthritis is specifically an inflammation of joints”. The patient accepts this.

- Scenario 2: This is a contrafactual situation that is exactly the same as Scenario 1, but here physicians, lexicographers, and informed laymen also apply the term »arthritis« to other parts of the body like the thigh.

Conclusion: There’s a social labor division in fixing the extension of terms like »arthritis«. A complete understanding of such terms is not required in order to master the language. Instead, experts may fix the meaning of expressions, and other speakers in the community rely on this kind of labor division. The internal state of speakers doesn’t in general individuate meaning.
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- Do these speakers know the truth conditions of utterances containing »arthritis«?
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