CHECKLIST SEMANTICS

Note: This is a preliminary list of material which is most likely not complete. Also, it only covers the content until Christmas. In preparing yourself for the exam as well as for the ZP, make sure that

(i) you understand the terms used below
(ii) you can explain these terms in plain words, always providing an example
(iii) you understand the way of reasoning we employed in adopting certain assumptions, and refuting others
(iv) you recognize which principle or generalization is relevant when presented with an example thereof.
(v) you can perform the kind of calculations we have done in class (all of which can also be found on the handouts)

The three objectives of semantics
Negative Polarity Item (NPIs)
Why a syntactic analysis of NPIs fails
Synonymy
Polysemy
Homophony
Ambiguity:
  ○ lexical
  ○ structural I: in overt syntax
  ○ structural II: in covert syntax/at Logical Form
Ambiguity criterion (i.e. definition of ambiguity: true and false in one and same situation)
Ambiguity vs. vagueness
Garden Path sentences
Scope
Recognize and describe different readings (interpretations) of a sentence
Designing scenarios by using diagrams
Evaluate reading as true/false in a scenario
Applying ambiguity criterion to a sentence in a scenario
Denotation ([[]])
Inference
Logical entailment
Lexically triggered inferences (stop, regret,...) vs. logical entailment
Premise
Conclusion
Validity
Soundness
Tautology (logically true sentence) - and how to recognize one in a Truth Table
Contradiction (logically false sentence) - and how to recognize one in a Truth Table
Contingency - and how to recognize one in a Truth Table
Truth conditions as sentence meanings, and how they are defined
Object vs. Metalanguage
Tarski’s Convention (T)
Liar paradox
Necessary and sufficient conditions
Which units bear the meaning?
Types vs. tokens
Utterance vs. sentence
Why is reference to situations necessary?
Propositions
Propositions as sets of situations
Evaluation of proposition in a situation
Intension vs. Extension
Possible set theoretic relations between sentences (subset, intersection, complement, set union)
Propositional Calculus:
  - translate from PC into natural language and v.v.
  - calculations: - are two formulas equivalent or not?
    - is a complex formula true or false given certain assumptions about the
      truth/falsity of the atomic formulas (p, q, r,...)?
Well-formed formula (wff)
Recursive definitions of wff
Truth Tables
Logical constants (¬, ∧, ∨, → ['material implication'], ↔) and their interpretation
Differences between natural language connectives and logical connectives
ex falso quodlibet
Variable
Logical equivalence
Compositionality
Motivation for compositionality
Fragment
Ontology
Meaning Rule
Semantic Composition Rule
Sentence Rule, Rule for non-branching nodes

COMING SOON:
Consistency and completeness
Function
Set
Function application, set abstraction
Compositional calculation of truth-conditions from syntactic tree (intransitive and transitive
constructions)
Predicate Logic: translating from and into NL
Universal quantifier (∀), existential quantifier (∃)
Interpretation of quantifiers
Monotonicity (upward, downward) and how to recognize it
**Reminder: How to Use the Ambiguity Test**

**Step 1:** Find the quantifiers and - if present - negation in the sentence. Quantifiers (QPs) and negation are the *scope bearing* elements, i.e. those are the items which will give rise to ambiguity:

1. A girl read every novel
2. Every guest didn’t come

**Step 2:** Determine possible scope orders between the scope bearing items. In our examples, there will only be two scope bearing items, so every sentence has two readings: a surface scope reading, which corresponds to the surface order of the scope bearing items, and an inverted scope interpretation, which reverses this order:

3. a. Surface Scope Reading for (1): a girl > every novel
   b. Inverted Scope Reading for (1): every novel > a girl

Since (1) has two interpretations, it is two-way ambiguous. Similarly for (2):

4. a. Surface Scope Reading for (2): every guest > not
   b. Inverted Scope Reading for (2): not > every guest

**Step 3:** Paraphrase the readings of the sentence using

- *there is/are NP for a NP, some NP, two, ...*
- *for every/most/all,... in case the quantifier contains every, most, all,...*
- *it is not the case for negation*

- The two readings of (1) can be paraphrases as follows:

5. A girl read every novel
   a. Paraphrase for Surface Scope Reading:
      *There is a girl who/such that this girl read every novel*
   b. Paraphrase for Inverted Scope Reading:
      *For every novel, there is a girl such that she read it*

- The two readings of (2) can be paraphrases as follows:

6. a. Paraphrase for Surface Scope Reading:
      *Every guest is such that he didn’t come*
   b. Paraphrase for Inverted Scope Reading:
      *It is not the case that every guest came*
**Step 4:** Find a scenario which makes the sentence true only in one interpretation (one can also say: (a scenario which satisfies the sentence).

(7) Scenario which satisfies the inverted reading of (1) only:

<table>
<thead>
<tr>
<th>Girls</th>
<th>Novels</th>
</tr>
</thead>
<tbody>
<tr>
<td>( \bullet_1 )</td>
<td>( o_i )</td>
</tr>
<tr>
<td>( \bullet_2 )</td>
<td>( o_j )</td>
</tr>
<tr>
<td>( \bullet_3 )</td>
<td>( o_k )</td>
</tr>
</tbody>
</table>

The surface reading does not truthfully describe the scenario, because there is no girl who read every novel. Neither \( o_1 \) nor \( o_2 \) nor \( o_3 \) read every novel.

The inverted reading truthfully is satisfied by the scenario, because for every novel, there is a girl who read this novel.

**Caution!!** The following scenario can be described by the inverted as well as by the surface reading!

(8) Girls | Novels
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>( \bullet_1 )</td>
<td>( o_i )</td>
</tr>
<tr>
<td>( \bullet_2 )</td>
<td>( o_j )</td>
</tr>
<tr>
<td>( \bullet_3 )</td>
<td>( o_k )</td>
</tr>
</tbody>
</table>

Note in particular that for every novel, there is a girl which read it (for \( o_i \) there is \( \bullet_2 \), for \( o_j \) there is \( \bullet_2 \) and for \( o_k \) there is \( \bullet_2 \)). It does not matter that the girl is always the same.