Presuppositions

1. Some basic facts and terminologies

1.1. Presuppositions and presupposition triggers

- Presuppositions are inferences **backgrounded** and **taken for granted**. Sentences with presuppositions can be felicitously uttered only in contexts where their presuppositions are satisfied/true. Expressions triggering presuppositions are **presupposition triggers**.

(1) Possessive expressions
   a. **John's daughter** will come.
   b. John has a daughter.   Existential pres.

(2) Cognitive factive verbs
   a. John **knows** that Mary hates Bill.
   b. Mary hates Bill.   Factive pres.

(3) Emotive factive verbs
   a. John **is happy** that Mary agrees to marry him.
   b. Mary agrees to marry John.   Factive pres.

(4) Additive adverbs
   a. Mary bakes cookies **again**.
   b. Mary has baked cookies before.   Additive pres.

(5) *The*+NP$_{SG}$
   a. **The student** is smart.
   b. There is a unique student in the context.   Uniqueness pres.

(6) Contrastive focus
   a. **JOHN** broke the computer.
   b. Someone broke the computer.   Existential pres.

(7) Clefts
   a. **It was** JOHN **who** broke the computer.
   b. Someone broke the computer.   Existential pres.

(8) Gender features
   a. **She** is brave!
   b. The person pointed at is a female.

1.2. Diagnostics of presuppositions: P-family test and HWAM test

- Presuppositions can survive even in some non-entailing contexts:

  Projection test (also called **P-family test**) (Chierchia & McConnell-Ginet 2000):
  If ϕ presupposes p, the presupposition p is inherited by "not ϕ", "perhaps ϕ", "if ϕ, then ψ", "ϕ?".

  The projection test essentially tests for the **backgroundedness** of implications: it marks out implications that are attached to a sentence not only when it is asserted but also when it is denied, hypothetically assumed, or questioned.

  > (9)   a.   John's daughter is coming.
  >   b.   John's daughter is not coming.
  >   c.   Perhaps John's daughter is coming.
  >   d.   If John's daughter is coming, we will throw a party.
  >   e.   Is John's daughter coming?
  >   ⤳ *John has a daughter.*

  Exercise: Use a projection test to show that a *it*-cleft triggers an existential presupposition.

- However, backgroundedness does not suffice to identify presuppositions. Some implications seem to pass the tests for being backgrounded-they survive as implications throughout the P family-but are not presupposed. Compare:

  > (10)   a.   What Judy lost on the flight from Ithaca to New York was her new flute.
  >   b.   Judy, who lost something on the flight from Ithaca to New York, likes to travel by train.
  >   c.   ⤳ *Judy lost something on the flight from Ithaca to New York.*

  (a) is infelicitous if (c) is not already established, showing that (a) presupposes (c). In contrast, (b) can be asserted even if the licenser has never heard about Judy, showing that (b) doesn't presuppose (c) but rather asserts (c).

- **"Hey, wait a minute" (HWAM)** test (von Fintel 2003): If a sentence ϕ presupposes p, ϕ can be responded by another discourse participant by "Hey wait a minute, I didn't know that p".

  > (11)   A: What Judy lost on the flight from Ithaca to New York was her new flute.
  >   B: Hey wait a minute. I didn't know that Judy lost something on the flight from ....

  > (12)   A: Judy, who lost something on the flight from Ithaca to New York, likes to travel by train.
  >   B: # Hey wait a minute. I didn't know that Judy lost something on the flight from ....

1.3.   Accommodation

- A presupposition of a sentence must normally be part of the common ground of the utterance context in order for the sentence to be felicitous. The process of a hearer assuming that a presupposition is true (even in the absence of explicit information that it is), is **presupposition accommodation**.

> (13)   Speaker A: "Bob seems really exhausted."
> Speaker B: "Well, part of the problem is that Bob's children are really obnoxious."

The above conversation is perfectly felicitous even if Speaker A doesn't know that Bob has children:

- If the presupposition cannot be properly accommodated (i.e., the presupposition is not true in the common ground), then we say that there is a **presupposition failure**.

> (14)   a.   # John's kid is coming, but John has no kid.
> b.   [There are two TAs for LING 201.] # The TA of LING 201 is very helpful.

1.4.   Comparing inferences (based on Chierchia & McConnell-Ginet (2000))

- Definitions:

  - A **entails** B iff B is true whenever A is true.
  - A **conversationally implicates** B iff B follows from the interaction of the truth conditions of A together with general principles of conversational exchange
  - A **presupposes** B iff B is backgrounded and taken for granted by A.

1.4.1   Presuppositions vs. entailments

- A sentence can entail another sentence without presupposing it.

> (15)   a.   Lee kissed Jenny.
> b.   Lee touched Jenny.

- A sentence can both entail and presuppose another sentence. The former notion is based on how an implication is licensed, while the latter is based on its discourse status.

> (16)   a.   Jenny realizes that syntax deals with sentence structure.
> b.   Syntax deals with sentence structure.

- A sentence can presuppose another sentence without entailing it.

> (17)   a.   If Bill discovers that syntax is easy, he will be delighted.
> b.   Syntax is easy.

(a) presupposes (b) since (a) seems generally to need (b) for felicity. But in special circumstances this presupposition can be canceled. (For instance, if the context makes it clear that the speaker doesn't know whether syntax is easy.) See more about defeasibility (section 1.3.3).

1.4.2 Presuppositions vs. conversational implicatures

- A sentence can conversationally implicates another sentence without presupposing it.

  (18) a. Mary has a child.
        b. Mary has exactly one child.

- A sentence can conversationally implicates another sentence as well as presupposing it.

  (19) a. Jim discovered that Bill is in New York.
        b. Bill is in New York.
        c. If Jim discovers that Bill is in New York, there will be trouble.
        d. If I discover that Bill is in New York, there will be trouble.

  The projection tests and intuitive judgments of being taken for granted show (a) presupposes (b). But, the contrast between (c) and (d) suggests that the presupposition is due to principles of conversation.

- **Exercise**: In each of these examples, the (a) sentences presuppose and/or entail the other sentences. Specify which is a presupposition and which a simple entailment and which is both an entailment and a presupposition. Explain what test(s) convinced you of your answer.

  (20) a. That John was assaulted scared Mary.
        b. Mary is animate.
        c. John was assaulted.
        d. That John was assaulted caused fear in Mary.

  (21) a. That John was assaulted didn't scare Mary.
        b. Mary is animate.
        c. John was assaulted.
        d. That John was assaulted didn't cause fear in Mary.

- **Exercise**: What relationship holds between the sentences in the following examples? Explain why you think that that relation holds.

  (22) a. It is false that everyone tried to kill Templeton.
        b. Someone did not try to kill Templeton.
  (23) a. That John left early didn't bother Mary.
        b. John left early.
  (24) a. Someone cheated on the exam.
        b. John cheated on the exam.
  (25) a. If John discovers that Mary is in New York, he will get angry.
        b. Mary is in New York.
  (26) a. Seeing is believing.
        b. If John sees a riot, he will believe it.

1.4.3   More on defeasibility (based on Levinson 1983)

- Presuppositions are liable to (namely, defeasible) evaporate in certain contexts.

– Case 1: Where what is said, taken together with background assumptions, is inconsistent with what is presupposed, the presuppositions are not assumed to be held by the speaker.

The presupposition of *know*, that I (the speaker) believe that Billy came, is explicitly denied in (b). This denial overrides the contradictory presupposition.

(27)   a. John doesn't **know** that Bill came. $\rightsquigarrow$ Bill came.
      b. I don't **know** that Bill came. $\not\rightsquigarrow$ Bill came.
      c. I didn't know that Bill came. $\rightsquigarrow$ Bill came.

Discussion: (d) doesn't presuppose the truth of the complement of *discover*? Why?

(28)   a. John/I discovered that Bill was here. $\rightsquigarrow$ Bill was here.
      b. John/I didn't discover that Bill was here. $\rightsquigarrow$ Bill was here.
      c. If John discovers that Bill was here, there will be trouble. $\rightsquigarrow$ Bill was here.
      d. If I discover that Bill was here, there will be trouble. $\not\rightsquigarrow$ Bill was here.

– Case 2: Where it is common knowledge that the presupposition is false, the speaker is not assumed to be committed to the truth of the presupposition.

(29)   (*Context: participants mutually know that John failed to get into a doctoral course.*)
      At least John won't have to **regret** that he did a PhD.

This effect is sensitive to background knowledge about the world:

(30)   a. Sue cried **before** she finished her thesis. $\rightsquigarrow$ Sue finished her thesis.
      b. Sue died **before** she finished her thesis. $\not\rightsquigarrow$ Sue finished her thesis.

– Case 3: Presuppositions can systematically fail to survive in certain kinds of discourse contexts.

(31)   in the construction of *reductio* arguments
      a. It isn't LUKE who will betray you. $\rightsquigarrow$ Someone will betray you.
      b. You say that someone will betray you. Well maybe so, But **it won't be Luke who will betray you**, it won't be Paul, it won't be Matthew, and it certainly won't be John. Therefore no one in this room is actually going to betray you.

(32)   in the presentation of evidence against some assumption
      a. He isn't aware that Serge is on the KGB payroll. $\rightsquigarrow$ Serge is on the KGB payroll.
      b. A: "Well we've simply got to find out if Serge is a KGB infiltrator."
      B: "Who if anyone would know?"
      C: "The only person who would know for sure is Alexis: I've talked to him and **he isn't aware that Serge is on the KGB payroll**. So I think Serge can be trusted."

2. The projection problem

2.1. Karttunen (1973): holes, plugs, and filters

- The problem of computing the presuppositions of complex sentences on the basis of the presuppositions of their parts is called **the projection problem for presuppositions**. Can we say that all complex sentences inherit all of the presuppositions of their parts? No. Compare:

  (33) a. Jane does**n't** know that Bob hates puppies.   ⤳ Bob hates puppies.
       b. Sam **said** that Jane knows that Bob hates puppies.   ⤳̸ Bob hates puppies.

  Negation lets the presuppositions of the simple sentence through to the complex sentence (called a '**hole**'), while *said* somehow blocks the presuppositions of the simple sentence (called a '**plug**').

  Exercise: Identify whether each of the following expressions is a hole or a plug: *know, tell, perhaps, believe, whether* (as in yes-no questions)

- **Filters**: expressions which sometimes do, and sometimes do not, let presuppositions through.

- **Filter 1**: *If*-conditionals

  (34) a. If Jane has met Bob, then Jane knows that he hates puppies.
       b. If Bob hates puppies, then Jane knows that he hates puppies.
  (35) a. If the train arrives on time, then John's daughter is coming.
       b. If John has a daughter, then John's daughter is coming.

  A generalization of *if*-conditionals: 'If S1 then S2' carries the presuppositions of S2 unless those presuppositions are entailed by S1 (together with some shared belief).

  (36) If John is enrolled in Pragmatics, he will regret choosing a course that teaches some logic.

- **Filter 2:** Conjunctions

  (37) a. The king is short, and the king's son is bald.
       b. The king has a son, and the king's son is bald.

  Sentence (b) presupposes that there is a king, but it does not presuppose that the king has a son.

  - View 1: the presupposition of the second clause is cancelled by the assertion of the first clause.
  - View 2 (the Stalnaker-Karttunen-Heim view): this presupposition is "satisfied" in the local context established by the first conjunct, and therefore it is not presupposed by the sentence as a whole: it need not be part of the common ground of the utterance context in order for the whole sentence to be felicitously uttered. (see more in section 2.2.3)

  A generalization of conjunctions: In a conjunction, the presupposition of a conjunct doesn't project over the conjunction if this presupposition is entailed by a preceding conjunct (together with some shared belief).

– **Filter 3**: Disjunctions

> (38) a. Either John's daughter is coming, or his son is coming.
> b. Either John's daughter is coming, or he doesn't have a daughter.

A generalization of disjunctions: In a disjunction, the presupposition of a disjunct doesn't project over the disjunction if this presupposition (together with some shared belief) contradicts the other disjunct.

> (39) (Shared belief: Mormons wear holy underwear.)
> a. Sue has stopped wearing holy underwear.
> ⤳ Sue used to wear holy underwear.
> b. Either Sue has never been a Mormon or [she has stopped wearing holy underwear].
> ⇸ Sue used to wear holy underwear.

NB: Disjunctions are more "symmetric" than conjunctions; one can often easily reverse the order of the disjuncts without changing either well-formedness or what is presupposed. Compare:

> (40) a.   Either John doesn't have a daughter, or his daughter doesn't live with him.
> b.   # John's daughter lives with him, and John has a daughter.

2.2. The pragmatic approach of presupposition projection

2.2.1 Common ground and context set

- A **common ground** can be thought of either a set of propositions that represents the conversational participants' mutual beliefs and shared knowledge.

  A common ground describes a set of possible worlds that are compatible with everything that the participants take to be shared knowledge, called a **context set**.

  Notations (following Chierchia & McConnell-Ginet 2000: chapter 6):

> (41) a. context: c
> b. common ground: $\text{COMGRD}(c)$
> c. context set: $c^* = \bigcap \text{COMGRD}(c)$

- If the sentence is accepted by the participants, the proposition it expresses is added to the common ground. The context set is updated by removing the worlds in which the proposition by this sentence is false and by keeping the worlds in which the proposition is true.

> (42) For a non-presuppositional sentence S that denotes a proposition p, when it is accepted by the participant in a context c, it updates the context to c' such that:
> a. $\text{COMGRD}(c') = \text{COMGRD}(c) \cup \{p\}$
> b. $c'^* = c^* \cap p$

2.2.2 Stalnaker's Bridge Principle

- A presupposition of a sentence must normally be part of the common ground of the utterance context in order for the sentence to be felicitous.

(43) **The Bridge Principle** (Stalnaker 1973, 1978)
A proposition can be used to update a context c only if all worlds in c^* are s.t. the proposition gives a determinate truth-value (1 or 0) to them.

"Since the whole point of expressing a proposition is to divide the relevant set of alternative possible situations — [the context set] — into two parts, to distinguish those in which the proposition is true from those in which the proposition is false, it would obviously be inappropriate to use a sentence which failed to do this. Thus, that a proposition is presupposed by a sentence in the technical semantic sense provides a reason for requiring that it be presupposed in the pragmatic sense whenever the sentence is used." (Stalnaker 1973)

2.2.3 Heim: sentences as context-change potentials

- Heim (1982, 1983): a sentence denotes a **Context Change Potentials** (ccp), which is a *possibly partial* function from context sets to context sets.

  For a presuppositional sentence, the ccp of this sentence is defined only if the context it applies to entails the presupposition of this sentence. When defined, it updates the context set by keeping only the worlds in which the sentence is true.

  (44) For any closed atomic sentence S:
  $$c^* + S = \begin{cases} c^* \cap \{w : [\![S]\!](w) = 1\} & \text{if } c^* \subseteq \text{PRES}(S) \\ \text{undefined} & \text{otherwise} \end{cases}$$
  (Here '$+$' represents context-incrementation (Kadmon 2001); '$c^* + S$' means "the result of applying the ccp of a sentence S to a context set c^*".)

  (45) For any sentence S, p is a presupposition of S iff $c^* + S$ is defined only if $c^* \subseteq p$.

- **Negation**: We first apply the ccp of S to c^*, and then subtract the resulting set of worlds from c^*. As such, $c^* + \text{not-S}$ is defined only if $c^* + S$ is defined, which predicts the presupposition projection effect of not-S.

  (46) $c^* + \text{not-S} = c^* - (c^* + S)$

- **Conjunction**: The presupposition of S_2 only needs to be "satisfied" in the local context $c^* + S_1$, and therefore it is not presupposed by the conjunctive sentence as a whole: it need not be part of the common ground of the utterance context in order for the whole sentence to be felicitously uttered.

  (47) $c^* + S_1 \text{ and } S_2 = (c^* + S_1) + S_2$

- *If*-**conditional**: To interpret the consequent in the context of the antecedent, we eliminate all the worlds in which the antecedent is true but the conjunction of antecedent and consequent is false.

  (48) $c^* + \text{if } S_1, S_2 = c^* - (c^* + S_1 - ((c^* + S_1) + S_2))$

  Discussion: How does (48) explain the projection of the presupposition of the antecedent? Does it explain why the presupposition of the consequent sometimes projects and sometimes doesn't?

2.2.4 The Proviso Problem

- "Satisfaction theories" of presuppositions (Stalnaker-Karttunen-Heim, Beaver 2001, von Fintel 2006, a.o.) predict that the semantic presupposition of a conditional "if S_1, then $S_2\{p\}$" (where p is the presupposition of S_2) is "if S_1, then p." But, we sometimes want the presupposition to be simply p.

    (49) If the train arrives on time, then John's daughter is coming.
        a. Semantic presupposition: *If the train arrives on time, then John has a daughter.*
        b. Actual accommodation: *John has a daughter.*

2.3. The semantic approach to presupposition projection

- Semantic strategy is to compute the semantic value of the complex construction. (In contrast, the pragmatic strategy computes semantic presupposition only for the simple sentence.)

    We assume that sentence receives a third value (#) whenever its presupposition is not true:

$\text{PRES}(p)$	p
1	1 or 0
0	#
#	#

    (50) p is a presupposition of ϕ iff ϕ receives a third value # whenever p is not True.

    Peters (1977) provides the truth tables of negation and conditionals as (i) and (ii):

    (i) Negation: not-p

p	not-p
1	0
0	1
#	#

    (ii) Conditionals: if p then q

$p \setminus q$	1	0	#
1	1	0	#
0	1	1	1
#	#	#	#

    The truth table (ii) predicts that the presupposition of the consequent of a conditional does not project over the conditional if the antecedent is false. (Ignore the bottom line for now, since we are not yet discussing presuppositions triggered in the antecedent.)

- Karttunen's objection:

    When the presupposition of the consequent is not entailed by the content of the antecedent, we perceive a presupposition even if we know that the antecedent is false.

    (51) If Germany is a monarchy, the king of France is happy.
        ⤳ [While we know that Germany is not a monarchy,] France has a king.

- A solution:

    (52) **Stalnaker's Non-triviality Principle**
        A proposition p can be used to update a context c iff $c^* \cap p \neq \varnothing$ and $c^* - p \neq \varnothing$

    Given the above Principle, the conditional sentence (51) can only be uttered in a context where the context set involves some worlds where Germany is a monarchy (and worlds where Germany isn't a monarchy). In (53), we want a counterfactual conditional:

    (53) We all know that Germany isn't a monarchy. If Germany #is/were a monarchy, then ....

- Peters' system is also called the "middle Kleene system":

Table 1: Truth table of the middle Kleene system (#: undefined/neither)

ϕ	ψ	$\neg\phi$	$\phi \wedge \psi$	$\phi \vee \psi$	$\phi \to \psi$
1	1	0	1	1	1
1	0	0	0	1	0
1	#	0	#	#	#
0	1	1	0	1	1
0	0	1	0	0	1
0	#	1	0	#	1
#	1	#	#	#	#
#	0	#	#	#	#
#	#	#	#	#	#

- The strong Kleene system: If there is enough classical information to determine the truth value of the conditional, then we can put the classical truth value in the table, if not, then not — it must remain #.

Table 2: Truth table of the strong Kleene system (#: undefined/neither)

ϕ	ψ	$\neg\phi$	$\phi \wedge \psi$	$\phi \vee \psi$	$\phi \to \psi$
1	1	0	1	1	1
1	0	0	0	1	0
1	#	0	#	1	#
0	1	1	0	1	1
0	0	1	0	0	1
0	#	1	0	#	1
#	1	#	#	1	1
#	0	#	0	#	#
#	#	#	#	#	#

- The weak Kleene (Bochvar's) system: If any part of a sentence is nonsense, then the sentence as a whole is non-sense. (If a formula has a classical truth value, 1 or 0, then all of its subformulas must too.)

Table 3: Truth table of the weak Kleene system (#: non-sense)

ϕ	ψ	$\neg\phi$	$\phi \wedge \psi$	$\phi \vee \psi$	$\phi \to \psi$
1	1	0	1	1	1
1	0	0	0	1	0
1	#	0	#	#	#
0	1	1	0	1	1
0	0	1	0	0	1
0	#	1	#	#	#
#	1	#	#	#	#
#	0	#	#	#	#
#	#	#	#	#	#

Discussion: Does the presupposition of ϕ (ϕ: "John's daughter is coming") project in each of the following sentences? Which system mentioned above successfully predicts the projection status?

(54) a. If John's daughter is coming, then we will have a party tonight.

b. If John has a daughter, then his daughter is coming.

c. If John's daughter is kind, then she (John's daughter) will pick you up in the airport.

3. Accommodation and cancellation

- In the following sentences, the presuppositions seem to "disappear" while not filtered out.

  (55) a. The king of France isn't bald — there is no king of France!
  b. It is possible that John has children and it is possible that his children are away.
  c. If I realize later that I haven't told you the truth, I will confess it to everyone.
  d. If John hasn't just stopped smoking, he has just started smoking.

3.1. Local accommodation

- Recall: The process of a hearer assuming that a presupposition is true (even in the absence of explicit information that it is), is **presupposition accommodation**.

  - **Global accommodation**: the hearer accommodates the presupposition of a sentence into the context c of the whole sentence.
  - **local accommodation**: the hearer accommodates a needed presupposition at an embedded level, and consequently only temporarily.
  - Local Accommodation is a last resort; it is is permissible whenever global accommodation would contradict the literal meaning or an implicature of a sentence.

- Negative sentences (Heim 1983)

  (56) Let S = the king of France is bald, $p = [\![$France has a king$]\!]$
  a. Global accommodation: $c^* \cap p + \text{not-S}$
  <u>France has a king</u> and The king of France isn't bald.
  b. Local accommodation: $c^* - (c^* \cap p + S)$
  It is not the case that [<u>France has a king</u> and the king of France is bald].

  By the global option, we end up with a context that entails France has a king. By the local option, the resulting context will only entail that either France has no king or he isn't bald.

- **Exercise:** Use local accommodation to explain (55d).

3.2. Two negations

- Perhaps, *not* is lexically ambiguous: there is a **hole-negation** and a **plug-negation**, (corresponding to the internal negation and the external/meta-linguistic negation by Horn 1985, 1989).

  (57) a. $[\![\text{not}_{\text{HOLE}}]\!] = \begin{bmatrix} 1 \to 0 \\ 0 \to 1 \\ \# \to \# \end{bmatrix}$
  b. $[\![\text{not}_{\text{PLUG}}]\!] = \begin{bmatrix} 1 \to 0 \\ 0 \to 1 \\ \# \to 0 \end{bmatrix}$

  However, we shall minimize such lexical ambiguities.

3.3. The assertion-operator A

- An alternative to accommodation is to "fix" the sentence instead of the common ground.

Table 4: Truth table of the A-operator

ϕ	$A(\phi)$
1	1
0	0
#	0

- Parsing a sentence (that contains a presupposition trigger) with an A-operator (that scopes over the trigger) is called **presupposition cancellation**.

(58) John is close to his sister.
 a. LF1: John is close to his sister (# when John has no sister.)   Preferred
 b. LF2: A [John is close to his sister] (Never #)   Dispreferred

Discussion: If the option of inserting an A-operator is allowed, what LFs are available for "John's daughter is not coming"? Which LF(s) are preferred? For each of these LFs, what's the truth value of this sentence when John doesn't have a daughter?