IS and Context

Lecture Plan:

- IS and Common ground
- Various notions of "givennes"?
- Assumed familiarity hierarchy (Prince 1981)
- Cognitive states: Prince+Chafe+Lambrecht
- Givenness hierachy (Gundel et al.)
- IS an salience (Hajičová)
- Centering theory

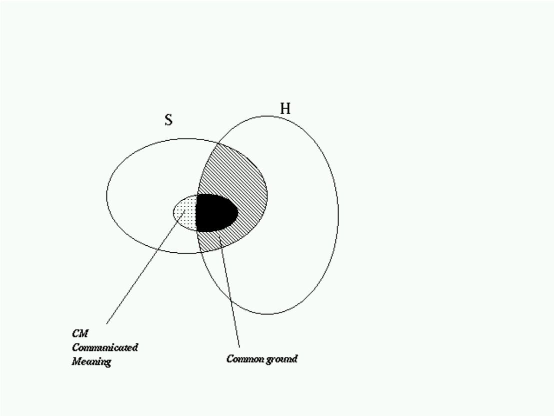
Reading: (Prince 1981), (Lambrecht 1994, Ch.3), (Baumann 1999), (Hajičová 1993, Sec.3.2), (Grosz, Joshi, and Weinstein 1995)

Recall: What is IS?

- **Speakers organize their utterances** in a way that reflects their model of the context and their communicative intentions (the intended context change).
- Utterances both *reflect* and *affect* the context.
- IS concerns a division of the expressed propositional content into:
  i. that part which the speaker presents as reflecting (relying on) the (assumed) context, i.e., *Theme*$_{is}$*, Background, contextually bound items*
  ii. that part which the speaker presents as affecting the context, i.e., *Rheme*$_{is}$*, Foreground, contextually non-bound items*

Question: What items can a cooperative speaker include present in Theme$_{is}$, in Background, or as CB?

Communicated Meaning & Common Ground



IS and Common Ground

Hypothesis:

Since Theme$_{is}$/Background/CB is what relates to context, it should be something the speaker and the hearer "share", therefore: (i) A cooperative speaker presents those items as part of Background that denote entities in the **common ground**. (ii) In contrast, Foreground/Rheme/NB items can denote entities which are in the common ground or those which are not.

Questions:

- When exactly can an item be considered part of the common ground?
- Is the distinction between in vs. outside the common ground sufficiently finegrained to explain acceptable uses of various linguistic expressions?
- If not, what is the appropriate taxonomy of cognitive status?
- What is the relation between cognitive status and linguistic form(s)?

Various notions of "givennes"

Prince (1981): A number of authors evoke some notion of "givennes" (e.g., old-new, known-new, presupposition-focus, given-new, etc.) in discussions of sentence-level phenomena, such as

- gapping
- dative (shift)
- pronominalization
- left/right dislocation
- (choice of) sentence subjects
- topicalization
- discourse structure

But, she observes they do not mean the same.

Three notions of "giveness"

Prince (1981)

Givennes$_P$: Predictability/Recoverability:
S presumes H can predict or could have predicted that a particular linguistic item will or would occur in a particular position in a sentence.

Givennes$_S$: Saliency:
S assumes that H has or could appropriately have some particular entity in consciousness at the time of hearing the utterance.

Givennes$_K$: Knowledge:
A assumes that H "knows", assumes or can infer a particular entity (not necessarily thinking about it)

These notions are different, though not mutually independent. $G_P \subset G_S \subset G_K$

Assumed Familiarity

Prince (1981): The "shared knowledge" picture is wrong!!!

Whether S can treat something as given$_K$ has to do with
what S assumes that H assumes.

- What kind of assumptions have a bearing on the form of text being produced?
- What inference will H draw on the basis of the form chosen by S?

Needed:

i. taxonomy of linguistic forms
ii. **taxonomy of assumed familiarity**
iii. account of their correlation

Linguistic Forms

There is a variety of linguistic forms that can be used to refer to or describe entities, e.g.,:

- definite NPs: *the N*
- demonstrative NPs: *this/that N*
- indefinite NPs: *a/some/one N, Ns*
- quantified NPs: *every/five N, ...*
- personal pronouns: *it, she ...*
- proper names: *John*

Sometimes various forms are OK at the same time, but not all the time.

(1) A rabbit$_1$ came in. The rabbit$_1$ / That rabbit$_1$ / It$_1$ had long fluffy ears.
(2) Bugs likes Bunny$_2$. She$_2$ / # A rabbit is fun to be with.

Linguistic Forms

Not only forms of NPs are relevant, but at least also word order and syntactic constructions!

(3) A rabbit_1 came in.
  a. ?? Long fluffy ears the rabbit_1 / that rabbit_1 / it_1 had.
  b. The rabbit_1 / That rabbit_1 / * It_1 I gave a bisquit.

(4) Bugs likes Bunny_2. She_2 / # A rabbit is fun to be with.

(5) Bugs_1 likes Bunny_2.
  a. ?? Who is fun to be with is her_2 / Bunny_2.
  b. It is her_2 / Bunny_2 who is fun to be with.
  c. It is her_2 / Bunny_2 Bugs_1 likes to be with.

??? A taxonomy ???

Taxonomies of Cognitive Status of Discourse Entities

At least some often quoted:

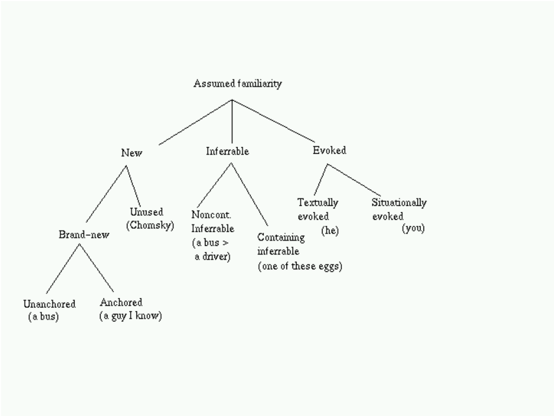
- Chafe (1974, 1976)
- Prince (1981)
- Chafe (1976, 1987) (see Lambrecht 1994, Ch. 3)
- Gundel et al. (1980, 1988, 1989, 1993)

Prince's Taxonomy

in terms of operations on a discourse model

- create a new discourse referent for a previously unknown entity (*brand new*)
- create a new discourse referent for a known entity (*unused*)
- create a new discourse referent for an inferrable entity (*inferrable*)
- access a discourse referent (*evoked*)

Prince's Taxonomy



Prince's Taxonomy: Examples

Brand new *I bought a dress.* (Hearer creates a new entity in DM)
Unused *Chomsky is famous.*
(Hearer moves entity to DM.)
Inferrable *I went to the postoffice and the clerck sold me a stamp.*
(Hearer infers entity from an entity in DM.)
Containing Inferrable *One of these eggs is rotten.*
(Hearer infers entity from an entity denoted by containing NP.)
Textually evoked *Sue went to see her grandma and the sweet lady baked a cake for her.*
(Entity already in DM because speaker gave hearer an instruction to put it there.)
Situationally evoked *The whiteboard is dirty.* (Entity in the situational context.)

Prince's Taxonomy

Familiarity scale: $E/E^S > U > I > I^C > BN^A > BN$

This scale can give rise to implicatures based on Grice's Maxim of Quantity, i.e., the use of a weaker expression implicates that the stronger expression would not have been appropriate/possible.

(6) a. I
b. Ellen
c. One of the people that work at Penn
d. A person that works at Penn
e. A person
bought a Toyota.

The scale also seems to hold for NPs representing anchors within BN^A entities.

Prince's Taxonomy

In informal conversational discourse, a tendency has been observed (in English) to reserve subjects for entities with higher familiarity; in other words, constructions are used which enable to keep entities with low familiarity out of subject position

(7) "run-on"
a. I had a little boy, black, about ten years old, he ...
b. There's some male beauty shops, they ...

(8) "deletion of subject relative markers"
(7) We got a lot of fancy Cadillac cars don't tip.
(8) I had a great-great-great-grandfather or something fought that Revolution.
(9) There was a peice of four-inch bone never mended.

(New) Chafe's Taxonomy

- interested in consciousness and verbalization
- "knowing something and thinking something are different mental states"
- cognitive states of concepts in hearer's consciousness at utterance time:
  - active
  - semi-active (accessible)
    - textual: deactivation
    - inferential: from cognitive schema
    - situational: presence in external world
  - inactive
- correlates cognitive states and formal properties of expressions
  - active: lack of pitch accent, pronominal coding
  - inactive: accentuation, full lexical coding

Accessibility vs. Identifiability

(Lambrecht 1994)

Accessibility/Activation "awareness", "easy access" (cf. Chafe)
Identifiablity hearer's ability to pick out a particular referent ("file") from among all those which can be designated with a part. ling. expression, and identify it as the one the speaker intends

- no one-to-one correspondence between (non)identifiability and (in)definiteness
- other dimensions: specific vs. non-specific indefinite NPs; generic NPs

Identifiability and activation/accessibility are independent but correlated:

- unidentifiable are outside the activation parameter (Prince's brand new)
- identifiable can be inactive, accessible or active

Combined Prince/Chafe/Lambrecht Taxonomy

(Baumann 1999)

Gundel's Givenness Hierarchy

	Cognitive Status	Ling. Form
1	in focus	*it*
2	activated	*that, this this N*
3	familiar	*that N*
4	uniquely identifiable	*the N*
5	referential	*an N, this N*
6	identifiable type	*an N*

Claims:

- $1 \supset 2 \supset 3 \supset 4 \supset 5 \supset 6$
- The cognitive status of an item is a necessary and sufficient condition for the use of the corresponding ling. form.

Gundel's Givenness Hierarchy: Examples

Identifiable type H knows the meaning of the type being used; she can access a representation of the type described by N.
I couldn't sleep last night. A rabbit kept me awake.

Referential S refers to specific entity. H does not know which.
I couldn't sleep last night. This rabbit in the garden kept me awake.

Uniquely identifiable H can identify the S's intended referent.
I couldn't sleep last night. The rabbit kept me awake.

Gundel's Givenness Hierarchy: Examples

Familiar H uniquely identifies the intended referent because she has a representation of it in memory.
I couldn't sleep last night. That rabbit in the garden kept me awake.

Activated H has a representation of the intended referent in short-term memory.
I couldn't sleep last night. That kept me awake.
"That" = e.g., the rabbit's gnawing on carrots ocurring at utterance time.

In focus (center of attention) H has a representation of the intended referent in the center of attention in short-term memory.
I couldn't sleep last night. That rabbit in the garden kept me awake. It gnaws very loudly.

Predictions of Gundel's Givenness Hierarchy

- A particular ling. form is inappropriate if the required cognitive status is not met.
- A form corresponding to a weaaker cognitive status than the referent actually has can be used (e.g., *the N* for an entity in center of attention).

Tested and mostly verified on naturally occurring discourse for Chinese, English, Japanese, Russian and Spanish (the hierarchy has been tailored to the specifics of each language, e.g., Russian has no articles).

So, can the speaker choose any IS partitioning?

What we need is a theory that makes predictions about IS partitioning as such, or includes the appurtenance to particular IS partitions as a parameter of ling. form. The latter is more appropriate anyway, because of the various ways in which IS can be realized in the ling. form in different languages.

Hajičová's Activation Model

- degrees of salience
- no taxonomy, continuous scale from "highly salient" to "faded away"
- assignment of activation degree calculated taking into account IS partitioning:
  - Theme$_{is}$-expression $\rightarrow$ maintain activation degree
  - Rheme$_{is}$-expression $\rightarrow$ raise to top
  - referents not re-accessed directly fade quicker than referents indirectly accessed
- also relates degrees of activation and the appropriateness of using particular types of referring expressions
- a cooperative speaker chooses as CB items what is already at/near the top of the activation scale

Centering Theory

(Grosz, Joshi, and Weinstein 1995)

- attentional limitations: only a small number of referents can be attended to
- local vs. global model of attention centering
- the Centering Theory concerns the local modelling of attention
  - each utterance has one backward looking center and an ordered set of forward looking centers
  - types of center-transitions depending on whether backward looking center is maintained or changed
  - preference for center continuation, or smooth (=gradual) shift
- if we take the backward looking center to correspond to the least communicatively dynamic item in Theme$_{is}$ (cf. previous lecture), we can compare and combine the centering model and Hajičová's activation model

References

Grosz, B., A. Joshi, and S. Weinstein (1995). Centering: a framework for modeling the local coherence of discourse. *Computational linguistics 21*(2), 203–226. `http://www.eecs.harvard.edu/grosz/papers/Centering.ps`.

Hajičová, E. (1993). *Issues of sentence structure and discourse patterns*, Volume 2 of *Theoretical and computational linguistics*. Prague, Czech Republic: Charles University.

Lambrecht, K. (1994). *Information Structure and Sentence Form*. Cambridge, U.K.: Cambridge University Press.