

Intonation and conversational implicature

Chris Potts, Ling 236: Context dependence in language and communication, Spring 2012

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1 Overview

- This handout provides a compact, somewhat selective overview of the general theory of topic and focus semantics described by Büring (2007).
- The presentation is geared towards understanding how topic and focus contribute to the calculation of conversational implicatures.
- Most of the handout is given over to in-class exercises designed to make sure we can work with the material.
 - Most exercises involve straightforward applications of the theory.
 - The final batch is more speculative.
- Other excellent handbook-style articles on intonational meaning include Kratzer 1991; Rooth 1996; Hirschberg 2004.

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2 Focussed and given

Definition 1 (\exists -closure). The existential closure of an expression X with n arguments, written $\exists C(X)$, is $\exists x_1 \dots x_n (X(x_1 \dots x_n))$.

We use existential closure to define entailment relations between phrases. This can be done more precisely via recursion: entity x entails entity y iff $x = y$, truth value x entails truth value y iff $x = F$ or $y = T$, and complex expression A entails complex expression B iff the two have the same semantic type and $A(a)$ entails $B(a)$ for all arguments a .

Definition 2 (Givenness). A phrase x is given relative to a set of phrases Y iff there is a phrase $y \in Y$ such that

- i. if x refers to an entity, then x and y refer to the same entity;
- ii. else, $\exists C(y)$ entails $\exists C(x)$

For more careful statements of the Givenness principle and discussion of its virtues and vices, see Schwarzschild 1999; Merchant 2001; Selkirk 2008.

Definition 3 (F(ocus)-marking). Given a set of phrases Y and a phrase X , the F-marking of X relative to Y is the phrase X' that is identical to X except that every sub-phrase in X that is not given with respect to Y is marked with a subscript **F**.

Definition 4 (Accenting). If a phrase is F-marked, pronounce it with a pitch accent (a local maximum or minimum of the fundamental frequency). Canonically, this is an H*L (falling) tune.

In-class exercises

- (1) F-mark the answers in the following dialogues relative to the set of phrases in their respective interrogatives:
 - a. A: Who teased Bart?
B: Lisa teased Bart.
 - b. A: Did Bart pass?
B: Lisa passed.
 - c. A: Did you see Dr. Cremer to get your root canal?
B: I'd like to strangle the butcher. (where *the butcher* co-refers with *Dr. Cremer*)
 - d. A: Why do you want to learn the violin?
B: Because I like stringed instruments.
- (2) What argument does Büring provide against a theory that says a word is given iff it has been uttered in the previous discourse?
- (3) What arguments are there that givenness is not reducible to anaphora?
- (4) What is the relevance of the following example to the view that a phrase is given iff it is presupposed to be true by at least one discourse participant?
 - A: Did you ever see an extraterrestrial?
 - B: I don't think there ARE_F extraterrestrials.

3 FOC and alternative semantics

Definition 5 (Ordinary semantic values). $\llbracket \cdot \rrbracket^\circ$ provides ordinary semantic values.

Definition 6 (FOC marking). Let X be an F-marked phrase in the sense of def. 3. The **FOC**-marking of X is the phrase X' that is just like X except that every F-mark that is not dominated by another F-mark is replaced with a **FOC** mark.

Definition 7 (Alternatives). For any phrase α , $ALT(\alpha)$ is a set of meanings of the same type as $\llbracket \alpha \rrbracket^\circ$. Assume $\llbracket \alpha \rrbracket^\circ \in ALT(\alpha)$.

These alternatives are conceptually the same as those given by the ALT functions of Chierchia et al. (To appear) and related work.

Definition 8 (FOC interpretation). The focus semantic interpretation function $\llbracket \cdot \rrbracket^{f,ALT}$ maps expressions to their focus meanings relative to the alternative function ALT . For any expression α ,

- i. $\llbracket \alpha \rrbracket^{f,ALT} = \{\llbracket \alpha \rrbracket^\circ\}$ if α is not **FOC** marked
- ii. $\llbracket \alpha_{\text{FOC}} \rrbracket^{f,ALT} = ALT(\alpha)$
- iii. $\llbracket \alpha \widehat{\beta} \rrbracket^{f,ALT} = \{a(b) : a \in \llbracket \alpha \rrbracket^{f,ALT} \text{ and } b \in \llbracket \beta \rrbracket^{f,ALT}\}$

In-class exercises

- (5) **F**-mark and **FOC**-mark the answers in the following dialogues relative to their respective interrogatives:
 - a. A: Will Joan pass?
B: Joan hopes to get an A.
 - b. A: Who read Daniel's paper?
B: A student of Daniel's read his paper.
- (6) What are the ordinary and focus semantic values of the following phrases:
 - a. $BART_{\text{FOC}}$ teased Lisa.
 - b. $LISA_{\text{FOC}}$ teased Bart.
 - c. Bart $TEASed_{\text{FOC}}$ Lisa.

$$\llbracket \text{Bart} \rrbracket^\circ = \text{Bart} \quad \llbracket \text{Lisa} \rrbracket^\circ = \text{Lisa} \quad ALT(\text{Bart}) = ALT(\text{Lisa}) = \left\{ \text{Bart}, \text{Lisa}, \text{Lisa} \right\}$$

$$\llbracket \text{tease} \rrbracket = \{ \langle x, y \rangle \mid x \text{ teases } y \} \quad ALT(\text{tease}) = \left\{ \begin{array}{l} \{ \langle x, y \rangle \mid x \text{ teases } y \} \\ \{ \langle x, y \rangle \mid x \text{ sees } y \} \\ \{ \langle x, y \rangle \mid x \text{ helps } y \} \\ \{ \langle x, y \rangle \mid x \text{ smiles at } y \} \\ \vdots \end{array} \right\}$$

4 Interrogative semantics

The general hypothesis is that a interrogative's meaning is a set of propositions. This assumption holds for many of the classic theories of interrogatives, which, though, differ in precisely which sets of propositions they deliver (Hamblin 1976; Karttunen 1977; Groenendijk and Stokhof 1984). (For review and critical discussion of these 'answer-set' approaches, see Ginzburg 1996.) Here, I assume an approach like that of Hamblin (1976).

(7) Did Lisa win?

- a. (Yes,) Lisa won.
- b. (No,) Lisa did not win.

$$\llbracket \text{Did Lisa win} \rrbracket = \{ \llbracket \text{Lisa won} \rrbracket^\circ, (W - \llbracket \text{Lisa won} \rrbracket^\circ) \} \quad (W \text{ the set of possible worlds})$$

(8) Who won?

$$\llbracket \text{Who won?} \rrbracket^\circ = \left\{ \begin{array}{l} \llbracket \text{Bart won} \rrbracket^\circ, \llbracket \text{Lisa won} \rrbracket^\circ, \llbracket \text{Maggie won} \rrbracket^\circ, \\ \llbracket \text{Bart and Maggie won} \rrbracket^\circ, \llbracket \text{Bart and Lisa won} \rrbracket^\circ, \\ \vdots \end{array} \right\}$$

Definition 9 (Question–Answer Congruence (QAC)). *A* is a felicitous answer to interrogative *Q* only if

- i. $\llbracket Q \rrbracket^\circ \subseteq \llbracket A \rrbracket^{\text{fALT}}$ and
- ii. there is no alternative focusing A' of *A* which has fewer **F**-markings and meets clause i.

In-class exercises

(9) First match up the question on the left with its appropriate answer on the right, and then explain how the above theory predicts these associations.

Who ate the beans?	Sam ate the BEAns _{FOC} .
What did Sam eat?	SAM _{FOC} ate the beans.

(10) Use the following example to show why the QAC (def. 9) cannot be strengthened so as to require equality between the ordinary value of the question and the focus value of the answer:

Q1: Who did Jones's father vote for?

Q2: Which Green Party candidate did Jones's father vote for?

A: He voted for JONES_{FOC}.

(11) Use the following example to explicate the role of clause ii in def. 9:

A: Who did Jones's father vote for?

B: He [VOTED_F FOR_F JONES_F]_{FOC}.

5 Topic marking and interpretation

Definition 10 (CT-marking). The CT-marked phrases are a subset of the given phrases. These will canonically be pronounced with the L*H (rising) intonation.

Definition 11 (CT interpretation). The topic semantic interpretation function $\llbracket \cdot \rrbracket^{\text{ct}, \text{ALT}}$ maps expressions to their topic meanings relative to the alternative function ALT . For any expression α ,

- i. $\llbracket \alpha \rrbracket^{\text{ct}, \text{ALT}} = \{ \llbracket \alpha \rrbracket^{\text{f}, \text{ALT}} \}$ if α is not CT-marked
- ii. $\llbracket \alpha_{\text{CT}} \rrbracket^{\text{ct}, \text{ALT}} = \{ \{ a \} : a \in \text{ALT}(\alpha) \}$
- iii. $\llbracket \widehat{\alpha \beta} \rrbracket^{\text{ct}, \text{ALT}} = \{ \{ a(b) : \exists a \in A, \exists b \in B \} : \text{for some } A \in \llbracket \alpha \rrbracket^{\text{ct}, \text{ALT}}, B \in \llbracket \beta \rrbracket^{\text{ct}, \text{ALT}} \}$

(12) Example:

- a. What did the pop stars wear?
- b. The FEmale_{CT} pop-stars wore CAftans_F.
- c. $\left\{ \begin{array}{l} \{ \text{the female pop-stars wore caftans, the female pop-stars wore jeans, the female pop-stars wore skirts ...} \} \\ \{ \text{the male pop-stars wore caftans, the male pop-stars wore jeans, the male pop-stars wore skirts ...} \} \\ \{ \text{the young pop-stars wore caftans, the young pop-stars wore jeans, the young pop-stars wore skirts ...} \} \\ \vdots \end{array} \right\}$

In-class exercises

(13) Provide the $\llbracket \cdot \rrbracket^{\text{ct}, \text{ALT}}$ values for the following expressions using the ALT function in (6).

- a. Lisa
- b. Lisa_{FOC}
- c. Lisa_{CT}
- d. Lisa_{CT} teased Bart_F

(14) How might we use the theory of topic and focus to explain the following contrast:

- a. Who did the playground bullies tease?
- b. Well, NELson_{CT} teased BART_F.
- c. # Well, Nelson teased BART_F.

(15) How shall we revise/extend the QUC (def. 9) to include CT-marking?

6 Conversational implicatures

the theory sketched so far is neutral about, and deliberately excludes, the intentions a speaker might have when using a particular F-pattern. It is not the meaning of focus to mark information, express contrast, or ‘invoke alternatives’; focus simply reflects certain properties of the discourse context. The relation between such contexts and speakers’ intentions is assumed to be a matter of conversational pragmatics, not IS-interpretation. (Büring 2007)

- (16) How can we use Gricean pragmatics and the theory of focus to explain how A1 and A2 differ in the context of Q?

Q: When did you buy your couch?

A: We bought our sofa in 2009.

A: We bought our SOFA_{CT} in 2009_{FOC}.

- (17) How can we use Gricean pragmatics and the theory of focus to explain what B communicates in the following dialogue?

A: Did Lisa pass?

B: Well, BART_{CT} passed.

To do this properly, we have to first fix contextual assumptions. Per the Gricean story, these will have a major impact on what B conveys.

- (18) Intuitively, the conversational implicatures of sentence (a) are stronger than those of sentence (b). How might we test this intuition experimentally, and why does our theory of focus predict the intuition to be accurate?¹

a. It’s been a pleasure working with SOME_F of you.

b. It’s been a pleasure working with some of you.

- (19) How do presuppositions, conversational implicatures, and intonational meaning come together to explain how the following sentences differ?

a. Bart called Lisa a linguist, and then SHE_F insulted HIM_F.

b. Bart called Lisa a linguist, and then she inSULTed_F him.

- (20) Negation is focus sensitive:

a. BART_{FOC} didn’t have the bee.

b. Bart DIDN’t_{FOC} have the bee.

How do these sentences differ on the theory of focus described here?

¹The example is adapted from an utterance by Dwight Shrute on *The Office*, episode 3.12, ‘Traveling salesmen’. He used (a), and he continued “and I will not forget those of you soon”, which really drives home the upper bound, in keeping with the results of Katsos and Breheny (2008).

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