Schwarzschild (1999)

PRO-GRAM
7 November 2008

1 Overview

- A data-driven theoretic proposal that relates a particular formulation of information structure to patterns of pitch accents.

2 Key Features

- Optimality-Theoretic framework (sort of)
- Production-oriented: Mapping from speaker intensions (sentence+discourse context) to forms (accent patterns)
- Anaphora-driven
    - A syntactic constituent may be marked as anaphoric (*Given*) or unspecified
    - *Anaphoric* = constituent stands in a particular semantic relation to some salient linguistic object (*antecedent*, also a constituent) in the discourse context (c.f. Williams (1997))
    - Focus is epiphenomenal, not a primitive
    - Focus is just the outer bounds of what is marked as Given/anaphoric
    - *Rhetorical relations* (e.g., Q/A congruence, contrast, QUD strategy) play a role in the choice of what is Given (see Schwarzschild, Section 5). In other words, anaphora is used to indicate the particular discourse relation that the speaker intends to make manifest.
- Dynamic update of the discourse context
    - Speaker may update the contents of the discourse context retroactively (i.e., *presupposition accommodation**)
    - Not deterministic, contrary to popular belief

      "In the examples presented here the relevant antecedent will be overt, but this does not preclude the possibility that a speaker could insinuate an antecedent, provided the hearer can accommodate it…the rules governing F-marking depends on what the speaker presents as Given" (p. 151)
    - This implies that it makes few firm predictions for naturalistic data

3 *Givenness*

'Givenness' = A property of a constituent/node* in a context

'GIVENNESS' = A constraint on feature structures

Definition of Given (final formal version):

An utterance U counts as Given iff it has a salient antecedent A and…

a. if U is type e, the A and U corefer;

b. otherwise: modulo ∃-type shifting, A entails the existential F-closure of U.

- A constituent that is interpreted as Given introduces the presupposition that it is anaphoric to some other constituent in the discourse context

- Anaphoric relation is based on entailment between an anaphor and its antecedent
  - Problem: Constituents do not always denote propositions (or truth values*), so the notion of entailment is not always meaningful
  - *Existential type shifting* (a.k.a., *ExClo*): Converts expressions to the type of proposition-denoting (or type t*) logical forms by replacing unfilled arguments with variables and existentially closing the result
  - ExClo(*hit*) = ∃x.∃y[x hit y]

- Interpretation of *F-marking*: A pattern of F-marking on a subtree dominated by a node B defines a class of antecedents that would make B count as Given
  - (Existential) F-closure: Replace F-marked constituents with variables of the same type and existentially close the variables
  - F-closure of [*John hit Bill*$_F$] = ∃x[John hit x]
  - F-closure of [*John* [*hit Bill*$_F$]$_F$] = ∃x∃P[P(x)(John)] *
  - F-marking weakens the conditions on antecedents (i.e., more F-marking implies more potential antecedents for B)
  - F doesn't *mean* anything more (i.e., it does not mark a focus)

- Example: In which context(s) does the VP [*hit Bill*$_F$] count as Given?

  C1: *George hit Bill*

  C2: *George hit Sue*

  C3: *George kissed Bill*

  Step 1: ExClo([*hit Bill*$_F$]) = ∃x[x hit Bill$_F$] *

  Step 2: F-closure of ∃x[x hit Bill$_F$] = ∃Y∃x[x hit Y]

Step 3: ExClo of potential antecedents (F-marking on antecedents is irrelevant)

C1: ExClo(*hit Bill*) = ∃x[x hit Bill]

C2: ExClo(*hit Sue*) = ∃x[x hit Sue]

C3: ExClo(*kissed Bill*) = ∃x[x kissed Bill]

Step 4: Check for entailment

☑ ∃x[x hit Bill] → ∃Y∃x[x hit Y] *

☑ ∃x[x hit Sue] → ∃Y∃x[x hit Y]

☒ ∃x[x kissed Bill] → ∃Y∃x[x hit Y]

- VP counts as Given in C1 and C2, but not in C3 *
- Question: What would make the VP count as Given in C3?

- NOTE: Tense considerations do not seem to matter

i. Yesterday, Bill ran a mile

ii. Tomorrow, John will run a mile

H* L-H% H* L-L%

- **KEY POINT**: A node may consist entirely of Given terminal elements and not be Given
  - A node may be non-Given when "old parts combine in new ways"
  - Explains why pronouns and other Given material is sometimes accented
  - No need for a separate notion of contrast (Selkirk 1995)

4 Constraints

- GIVENNESS: If a node is not F-marked, it must be Given.

= Contrapositive: If a node is not Given, it must be F-marked

≠ Converse: If a node is F-marked, it must be Given

- FOC (paraphrased): An F-marked node that is not immediately dominated by another F-marked node must contain an accent.
- AVOIDF: Do not F-mark.
- HEADARG: A head is less prominent than its internal argument.
- (ACC→F): If a node is accented, it must be F-marked. *
- Ranking: GIVENNESS, FOC, ACC→F << AVOIDF << HEADARG

5 Example

Which accent pattern is predicted for (ii) in the context of (i)?

i. Who did John's mother praise?
ii. She praised him.

- KEY: Cyclical (i.e., bottom up) evaluation guarantees minimality *
- *him* is Given since it is coreferential with *John*
- *praised* is Given because ∃x∃y[x praise y] → ∃x∃y[x praised y]
- [*praised him*] is not Given, because ∃x∃y[x praised y] does not entail ∃x∃y[x praised John]
    - GIVENNESS requires F-marking on VP
    - …then FOC + HEADARG require an accent on *him*
    - …and ACC→F requires F-marking on *him*

      [*praised* HIM_F]$_F$
- Minimal alternative: Assume F-marking and accentuation on *him*

  [*praised* HIM_F]

  ∃x∃y[x praise y] → ∃Y∃x[x praised Y]
    - GIVENNESS, FOC and ACC→F are satisfied
    - Fewer violations of AVOIDF
- *she* is Given since it is coreferential with *John's mother*
- IP is Given since ∃x[John's mother praised x] → ∃Y[John's mother praised Y]
- Final output: *she praised* HIM_F
- More F-marking (and by ACC→F, more accentuation) implies more violations of AVOIDF

6 Known Issues

- Impoverished phonological constraints (HEADARG, FOC)
    - Role of phrasing?
    - Inherent prosodic weakness of certain lexical classes (Ladd 1980, Selkirk 1995, German et al. 2006)
- Most criticism targets the assumption of determinism (Roberts, 2008)
- Uni-directional, production-oriented model
    - No way to model interpretation or possible assymmetries
    - Problematic for communication involving multiple types of underspecification (e.g., ambiguous pronouns (see my thesis))