

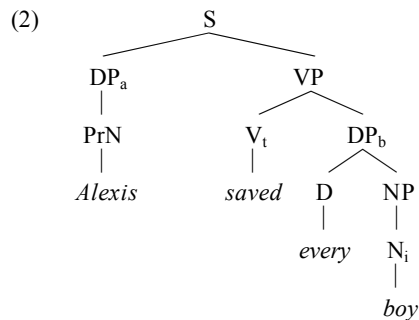
**Ling 320: Semantics.** Lecture Notes. November 27<sup>th</sup>! 2007.

**1. Quantifier Raising.** Last class, we posited a rule of *Quantifier Raising*, which (obligatorily) raises a quantificational DP to the left of S.

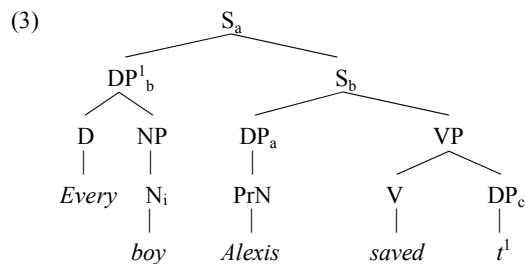
To illustrate this rule, let's step through the derivation of (1).

(1) Alexis saved every boy.

First, the phrase structure rules will produce the following Deep Structure:



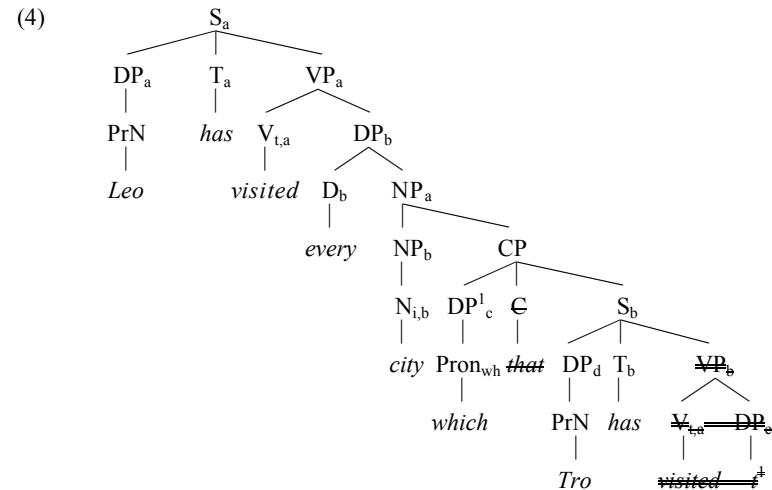
Next, *Quantifier Raising* applies to this structure, yielding:



Our semantic rules then interpret this structure; an example derivation is provided in last Thursday's lecture notes.

We looked at a number of arguments for adopting *Quantifier Raising*. First, it accounts for so-called scope ambiguities (see previous handout for details).

Second, it accounts for cases of *antecedent contained deletion* (ACD). The argument runs as follows: We have already observed that in order for a VP to delete, it must be identical in meaning to some VP in the antecedent discourse. However, in (4), it is not at all obvious what provides the antecedent for the elided VP<sub>2</sub> (represented by the double-strikethrough font.)



Once we raise DP<sub>2</sub> by Quantifier Raising, we can see that identical VPs obtain:

(5) [S<sub>2</sub> [DP Every city which<sup>1</sup> Tro has ~~~~[VP visited t<sup>1</sup>]]~~]<sup>2</sup> [S<sub>1</sub> Leo has [VP visited t<sup>2</sup>]]~~

A third argument comes from parallels between *Quantifier Raising* and other putative movement rules, such as *Wh-Movement*. Recall that *Wh-Movement* moves a *wh*-phrase to the beginning of a sentence:

- (6) A girl saved Jonathan.
- (7) Who<sub>1</sub> did a girl save t<sub>1</sub>?

This movement is known to be subject to restrictions. For example, a *wh*-word cannot move out of a conjoined phrase:

- (8) A girl saved [Jonathan and Christian].
- (9) \*Who<sub>1</sub> did a girl save [t<sub>1</sub> and Christian]?

Quantifier Raising appears to be subject to the same constraint. While a quantificational DP may move to the beginning of a sentence, account for the inverse scope in:

- (10) A girl saved every boy.
- (11) [Every boy]<sub>1</sub> a girl saved *t*<sub>1</sub>.

a quantificational DP cannot take scope out of a conjoined phrase, i.e., inverse scope is (reported to be) lacking for the following:

- (12) A girl saved every boy and her mother.
- (13) \*[Every boy] a girl saved [*t*<sub>1</sub> and her mother].

Similarly, a *wh*-word may not move out of a relative clause:

- (14) A girl [<sub>CP</sub> that saved Jonathan] was wounded.
- (15) \*Who<sub>1</sub> was a girl [<sub>CP</sub> that saved *t*<sub>1</sub>] wounded?

Likewise, a quantificational DP cannot take scope out of a relative clause, i.e., inverse scope is again lacking for:

- (16) A girl [that saved every boy] was wounded.
- (17) \*[Every boy]<sub>1</sub> a girl [<sub>CP</sub> that saved *t*<sub>1</sub>] was wounded.

The lack of inverse scope in these examples provides additional support for Quantifier Raising, as it appears that the rule is subject to the same constraints as other movement rules: Neither *Wh*-Movement nor Quantifier Raising can move a phrase out of a conjoined phrase or relative clause (so-called *islands* for movement).

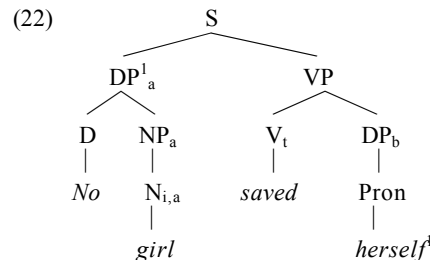
A fourth argument for Quantifier Raising comes from sentences in which a quantificational DP antecedes a pronoun. Recall that when a quantificational DP antecedes a pronoun, that pronoun must be interpreted as a bound variable:

- (18) No girl saved her mother.
- (19)  $\{x \mid x \text{ is a girl in } s\} \cap \{x \mid x \text{ saved } x\text{'s mother in } s\} = \emptyset$
- (20) No girl saved herself.
- (21)  $\{x \mid x \text{ is a girl in } s\} \cap \{x \mid x \text{ is saving } x \text{ in } s\} = \emptyset$

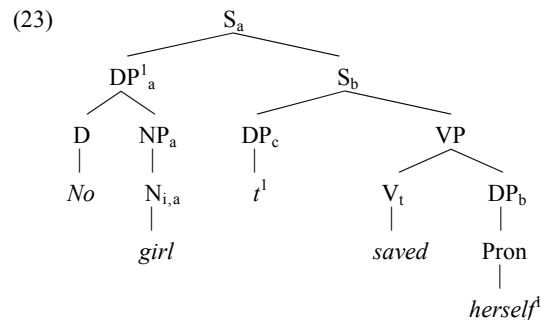
But how do we *derive* this bound variable interpretation?

Let's look at the possible structures we have available for interpretation:

Before Quantifier Raising:



After Quantifier Raising:



Assume that these examples are interpreted in  $s_0$ , under assignment  $[1 \rightarrow \text{Kumiko}]$ .

Which structure gives us a bound variable interpretation of *herself* for free?

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By your intuitions, which of the following permits an inverse scope interpretation, and which does not?

- (24) A girl saved every boy.
- (25) [A girl]<sub>i</sub> saved every boy in her<sub>i</sub> class.
- (26) [A girl]<sub>i</sub> saved every boy near her<sub>i</sub>.

Do we account for this?

## 2. Scope Cross-linguistically

“In Hungarian... quantifier scope is disambiguated by word order... Left-to-right order corresponds to scopal order...” (Szabolcsi 2006)

- (27) a. Sok ember mindenkít felhívott. *Hungarian*  
Many man everyone-acc up-called  
‘There are many men who each called everyone.’
- b. Mindenkit sok ember felhívott.  
Everyone many men up-called  
‘Every person is such that many men (not necessarily the same ones) called him/her.’

“German, Japanese, and Mandarin are sometimes called scope freezing languages because (at least on the canonical Subject precedes Object order) they do not allow inverse scope.” (Szabolcsi 2006)

- (28) Dareka-ga dono hon-mo yonda. *Japanese*  
Someone-NOM every book-ALSO read  
‘At least one person is such that he/she read every book.’

Korean has been said to be a scope freezing language as well:

- (29) Nwukwunka-ka nwukwuna-lul salanghanta. *Korean*  
someone- NOM everyone-ACC loves  
‘At least one person is such that he/she loves everyone.’

## 3. Announcements

-We will go over the solution to Assignment 11 in class on Thursday;  
-Your graded assignments will be available for pick-up in the CMLL main office the following Tuesday (the 4<sup>th</sup>);  
-The final exam is take-home; it will be posted online on Wednesday, Dec. 5<sup>th</sup>, and will be due the following Tuesday, Dec. 11<sup>th</sup>.  
-S(emantics) A(nd) L(inguistic) T(heory) is being held this year at UMass-Amherst, March 21<sup>st</sup>-23<sup>rd</sup>. One of the guest speakers will be Lisa Matthewson (now at UBC), who works on the semantics of St’át’imcets (Lillooet Salish). Salish languages are spoken in western Canada and the Pacific Northwest of the US. The word Nuxálk for ‘he had had a bunchberry plant’ (from Wikipedia): [xɫp’χ<sup>w</sup>ɬɪpɫ:sk<sup>w</sup>ts’].

## 4. The Meaning of *The*.

(30)  $[[the\ book]]^{s,g} =$   
*Presupposition:*

(31)  $[[his_i\ mother]]^{s,g} =$

## 5. A Bigger Picture.

A model of how conversation works (based loosely on Stalnaker 1973, 1974, Karttunen 1974, Heim 1982, 1983).

Every sentence is uttered with respect to a *context*. A context consists of:

*A common ground.* The common ground is the conjunction of all those propositions that the participants of the conversation mutually take for granted as true, because they are shared beliefs in the community, or because they have been established in the course of the preceding conversation.

*An assignment function.* The assignment function assigns a value to variables that are not bound (e.g., referential pronouns). The idea is that the assignment function keeps track of those individuals that are salient in the utterance situation.

When a sentence is *asserted*, the proposition that it denotes is added to the common ground. When a sentence has a *presupposition*, the presupposition must be entailed by the common ground for the sentence to be conversationally appropriate.

Presuppositions are thus constraints on the context in which a sentence is uttered, in order for the sentence to be appropriate in that context. If a sentence is uttered in a context in which its presuppositions are not in the common ground, it is conversationally inappropriate for that context; this is *presupposition failure*.

*Implicatures* can be taken to be propositions that are tentatively added to the common ground. If they are not explicitly denied, they remain in the common ground.

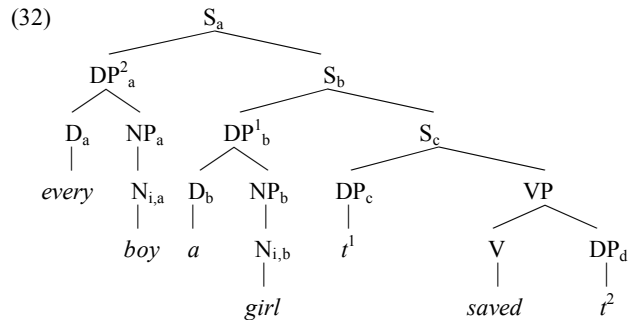
The assignment function is furnished by the context: From Büring (2007):

“... a pronoun like *her* can refer to any [individual], depending on its index. If we want ... to model the range of available referents for pronouns, we need to include a

theory of how assignments are ... 'built' in a discourse. As a first step, assume that ... an assignment reflects the anaphoric options in a given context, i.e. which discourse referents, modeled by indices, are available at a given point in the conversation. A pronoun like *her*<sub>7</sub>, if unbound, will only be interpretable in a context that has previously introduced the discourse referent 7 (and only if *g*(7) is female)... Discourse referents can be introduced (i.e. indices can be added to the domain an assignment) in at least two different ways: Linguistically, by the use of full DPs, and in particular indefinites, and extralinguistically, by pointing to an object, or simply by virtue of that object becoming salient.

“One may wish to go further and model the intuition that, say, *she* can't usually refer to any female individual previously introduced, but will refer to the most salient one. To do this, the context needs to provide an ordering among the available discourse referents; since assignments are functions, a straightforward way of achieving this is to assume that the last element in the assignment is more salient than the one before it, which in turn is more salient than the one before it, etc. Using an indefinite, for example, will serve not only to introduce a new discourse referent, but also to make that DR maximally salient, i.e. put it at the end of the list. Other linguistic devices, say marking a DP as a topic, or referring to an existing DR using a definite description, may yield the same effect, as will pointing to an object etc.”

Extra Credit for Assignment 11. Provide derivations for the following sentences:



Here is a start:

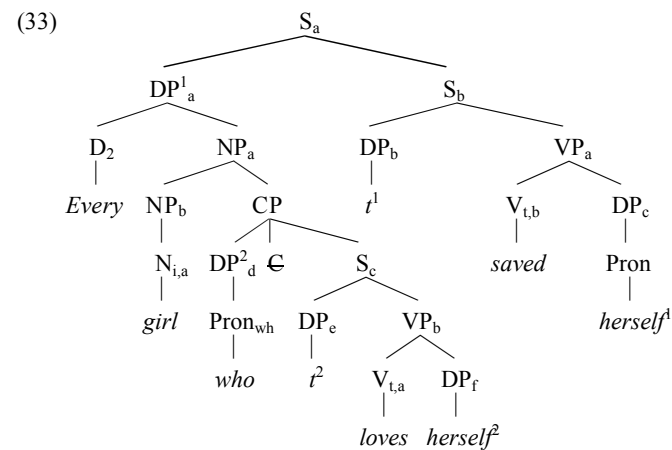
For any  $s, g$ ,  $\llbracket S_a \rrbracket^{s,g} = 1$  iff

$$\{x \mid \llbracket S_b \rrbracket^{s,g[2 \rightarrow x]} = 1\} \in \llbracket DP_a^2 \rrbracket^{s,g} \tag{1}$$

$$\{x \mid \{y \mid \llbracket S_c \rrbracket^{s,g[2 \rightarrow x, 1 \rightarrow y]} = 1\} \in \llbracket DP_b^1 \rrbracket^{s,g}\} \in \llbracket DP_a^2 \rrbracket^{s,g} \tag{1}$$

$$\{x \mid \{y \mid \llbracket VP \rrbracket^{s,g[2 \rightarrow x, 1 \rightarrow y]} \in \llbracket DP_c \rrbracket^{s,g[2 \rightarrow x, 1 \rightarrow y]}\} \in \llbracket DP_b^1 \rrbracket^{s,g}\} \in \llbracket DP_a^2 \rrbracket^{s,g} \tag{a}$$

...



Again, here is a start:

For any  $s, g$ ,  $\llbracket S_a \rrbracket^{s,g} = 1$  iff

$$\{x \mid \llbracket S_b \rrbracket^{s,g[1 \rightarrow x]} = 1\} \in \llbracket DP_a^1 \rrbracket^{s,g} \tag{1}$$

If you want extra practice, you can also calculate and submit a derivation for the extra credit from Assignment 10 (we will correct it, and return it to you before the next exam is posted.)