

Ling 320: Assignment 11. Solution.

(i) *Her* can be interpreted referentially, or as a bound variable. The two resulting interpretations for the VP are as follows:

- (1) a. $\{x \mid x \text{ loves } x\text{'s mother in } s\}$ *bound variable*
 b. $\{x \mid x \text{ loves Kinneret's mother in } s\}$ *referential*

(ii) The example is ambiguous because the pronoun can be interpreted as a bound variable, or as a referential variable, producing distinct truth-conditions:

- (2) a. $K \in \{x \mid x \text{ loves } x\text{'s mother in } s\}$,
 and every y that is not $K \notin \{x \mid x \text{ loves } x\text{'s mother in } s\}$
 b. $K \in \{x \mid x \text{ loves } K\text{'s mother in } s\}$,
 and every y that is not $K \notin \{x \mid x \text{ loves } K\text{'s mother in } s\}$

(iii) The two possible interpretations for *herself* are:

- (3) a. $\{x \mid x \text{ loves } x \text{ in } s\}$ *bound variable*
 b. $\{x \mid x \text{ loves } K \text{ in } s\}$ *referential*

(iv) Reflexive pronouns must be interpreted as bound variables, since the only interpretation for the sentence available is the following:

- (4) $K \in \{x \mid x \text{ loves } x \text{ in } s\}$, every y that is not $K \notin \{x \mid x \text{ loves } x\text{'s mother in } s\}$

The referential interpretation is lacking:

- (5) $K \in \{x \mid x \text{ loves } K \text{ in } s\}$, every y that is not $K \notin \{x \mid x \text{ loves } K \text{ in } s\}$

(v) The two interpretations for the missing VP are as follows:

- (6) a. $\{x \mid x \text{ loves } C\text{'s mother in } s\}$
 b. $\{x \mid x \text{ loves } x\text{'s mother in } s\}$

This accounts for the ambiguity of the deleted VP.

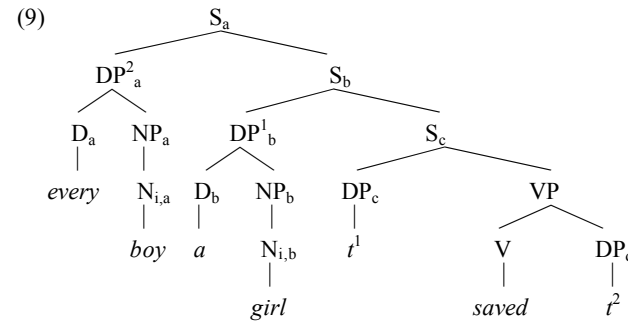
(vi) The following example, in contrast, is (often claimed to be) *unambiguous*:

- (7) Charles_i loves himself_i. Erik does, too.

The only possible interpretation is the bound variable interpretation, which is expected:

- (8) a. $E \in \{x \mid x \text{ loves } x \text{ in } s\}$
 b. Lacking: $E \in \{x \mid x \text{ loves } C \text{ in } s\}$

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

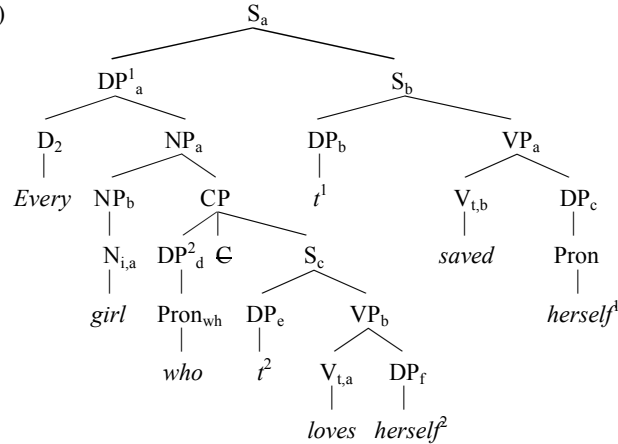


For any s, g , $\llbracket S_a \rrbracket^{s,g} = 1$ iff

- $\{x \mid \llbracket S_b \rrbracket^{s,g[2 \rightarrow x]} = 1\} \in \llbracket DP_a^2 \rrbracket^{s,g}$ (l)
 $\{x \mid \{y \mid \llbracket S_c \rrbracket^{s,g[2 \rightarrow x, 1 \rightarrow y]} = 1\} \in \llbracket DP_b^1 \rrbracket^{s,g}\} \in \llbracket DP_a^2 \rrbracket^{s,g}$ (l)
 $\{x \mid \{y \mid \llbracket S_c \rrbracket^{s,g[2 \rightarrow x, 1 \rightarrow y]} = 1\} \in \llbracket DP_b^1 \rrbracket^{s,g}\} \in \{A \mid \langle \llbracket NP_a \rrbracket^{s,g}, A \rangle \in \llbracket D_a \rrbracket^{s,g}\}$ (g)
 $\langle \llbracket NP_a \rrbracket^{s,g}, \{x \mid \{y \mid \llbracket S_c \rrbracket^{s,g[2 \rightarrow x, 1 \rightarrow y]} = 1\} \in \llbracket DP_b^1 \rrbracket^{s,g}\} \rangle \in \llbracket every \rrbracket^{s,g} \in, (b)$
 $\llbracket NP_a \rrbracket^{s,g} \subseteq \{x \mid \{y \mid \llbracket S_c \rrbracket^{s,g[2 \rightarrow x, 1 \rightarrow y]} = 1\} \in \llbracket DP_b^1 \rrbracket^{s,g}\}$ c, \in
 $\llbracket NP_a \rrbracket^{s,g} \subseteq \{x \mid \{y \mid \llbracket S_c \rrbracket^{s,g[2 \rightarrow x, 1 \rightarrow y]} = 1\} \in \{A \mid \langle \llbracket NP_b \rrbracket^{s,g}, A \rangle \in \llbracket D_b \rrbracket^{s,g}\}\}$ (g)
 $\llbracket NP_a \rrbracket^{s,g} \subseteq \{x \mid \langle \llbracket NP_b \rrbracket^{s,g}, \{y \mid \llbracket S_c \rrbracket^{s,g[2 \rightarrow x, 1 \rightarrow y]} = 1\} \rangle \in \llbracket a \rrbracket^{s,g}\}$ $\in, (b)$
 $\llbracket NP_a \rrbracket^{s,g} \subseteq \{x \mid \llbracket NP_b \rrbracket^{s,g} \cap \{y \mid \llbracket S_c \rrbracket^{s,g[2 \rightarrow x, 1 \rightarrow y]} = 1\} \neq \emptyset\}$ (c), \in
 $\llbracket NP_a \rrbracket^{s,g} \subseteq \{x \mid \llbracket NP_b \rrbracket^{s,g} \cap \{y \mid \llbracket VP \rrbracket^{s,g[2 \rightarrow x, 1 \rightarrow y]} \in \llbracket DP_c \rrbracket^{s,g[2 \rightarrow x, 1 \rightarrow y]} \neq \emptyset\}$ (a)

- $[[NP_a]^{s,g} \subseteq \{x \mid [NP_b]^{s,g} \cap \{y \mid [VP]^{s,g[2 \rightarrow x, 1 \rightarrow y]} \in \{A \mid [t^1]^{s,g[2 \rightarrow x, 1 \rightarrow y]} \in A\} \neq \emptyset\}$ (h)
 $[[NP_a]^{s,g} \subseteq \{x \mid [NP_b]^{s,g} \cap \{y \mid [t^1]^{s,g[2 \rightarrow x, 1 \rightarrow y]} \in [VP]^{s,g[2 \rightarrow x, 1 \rightarrow y]}\} \neq \emptyset\}$ (h)
 $[[NP_a]^{s,g} \subseteq \{x \mid [NP_b]^{s,g} \cap \{y \mid y \in [VP]^{s,g[2 \rightarrow x, 1 \rightarrow y]}\} \neq \emptyset\}$ (k)
 $[[NP_a]^{s,g} \subseteq \{x \mid [NP_b]^{s,g} \cap \{y \mid y \in \{z \mid z \text{ saved } [DP_d]^{s,g[2 \rightarrow x, 1 \rightarrow y]} \text{ in } s\} \neq \emptyset\}$ (f), (b), (c)
 $[[NP_a]^{s,g} \subseteq \{x \mid [NP_b]^{s,g} \cap \{y \mid y \text{ saved } [DP_d]^{s,g[2 \rightarrow x, 1 \rightarrow y]} \text{ in } s\} \neq \emptyset\}$ (h)
 $[[NP_a]^{s,g} \subseteq \{x \mid [NP_b]^{s,g} \cap \{y \mid y \text{ saved } [t^2]^{s,g[2 \rightarrow x, 1 \rightarrow y]} \text{ in } s\} \neq \emptyset\}$ (b)
 $[[NP_a]^{s,g} \subseteq \{x \mid [NP_b]^{s,g} \cap \{y \mid y \text{ saved } x \text{ in } s\} \neq \emptyset\}$ (k)
 $[[boy]^{s,g} \subseteq \{x \mid [girl]^{s,g} \cap \{y \mid y \text{ saved } x \text{ in } s\} \neq \emptyset\}$ (b)x4
 $\{x \mid x \text{ is a boy in } s\} \subseteq \{x \mid \{y \mid y \text{ is a girl in } s\} \cap \{y \mid y \text{ saved } x \text{ in } s\} \neq \emptyset\}$ (c)x2

(10)



- i. For any s, g , $[[NP_a]^{s,g} =$
 $[[NP_b]^{s,g} \cap [CP_b]^{s,g}$ (i)
 $[[girl]^{s,g} \cap [CP_b]^{s,g}$ (b)x2
 $[[girl]^{s,g} \cap \{x \mid [S_c]^{s,g[2 \rightarrow x]} = 1\}$ (j)
 $[[girl]^{s,g} \cap \{x \mid [VP_b]^{s,g[2 \rightarrow x]} \in [DP_c]^{s,g[2 \rightarrow x]}\}$ (a)

- $[[girl]^{s,g} \cap \{x \mid [VP_b]^{s,g[2 \rightarrow x]} \in \{A \mid [t^2]^{s,g[2 \rightarrow x]} \in A\}\}$ (h)
 $[[girl]^{s,g} \cap \{x \mid [t^2]^{s,g[2 \rightarrow x]} \in [VP_b]^{s,g[2 \rightarrow x]}\}$ (h)
 $[[girl]^{s,g} \cap \{x \mid x \in [VP_b]^{s,g[2 \rightarrow x]}\}$ (k)
 $[[girl]^{s,g} \cap \{x \mid x \in \{y \mid \langle y, [DP_f]^{s,g[2 \rightarrow x]} \rangle \in [V_{t,a}]^{s,g[2 \rightarrow x]}\}\}$ (f)
 $[[girl]^{s,g} \cap \{x \mid \langle x, [DP_f]^{s,g[2 \rightarrow x]} \rangle \in [V_{t,a}]^{s,g[2 \rightarrow x]}\}$ (h)
 $[[girl]^{s,g} \cap \{x \mid \langle x, [herself^2]^{s,g[2 \rightarrow x]} \rangle \in [V_{t,a}]^{s,g[2 \rightarrow x]}\}$ (b)
 $[[girl]^{s,g} \cap \{x \mid \langle x, x \rangle \in [V_{t,a}]^{s,g[2 \rightarrow x]}\}$ (c)
 $[[girl]^{s,g} \cap \{x \mid \langle x, x \rangle \in [loves]^{s,g[2 \rightarrow x]}\}$ (b)
 $[[girl]^{s,g} \cap \{x \mid x \text{ loves } x \text{ in } s\}$ (c), (e)
 $\{x \mid x \text{ is a girl in } s\} \cap \{x \mid x \text{ loves } x \text{ in } s\}$ (c)
 $\{x \mid x \text{ is a girl in } s \text{ and } x \text{ loves } x \text{ in } s\}$ (c)

ii. For any s, g , $[[S_a]^{s,g} = 1$ iff

- $\{x \mid [S_b]^{s,g[1 \rightarrow x]} = 1\} \in [DP_a^1]^{s,g}$ (l)
 $\{x \mid [S_b]^{s,g[1 \rightarrow x]} = 1\} \in \{A \mid \langle [NP_a]^{s,g}, A \rangle \in [every]^{s,g}\}$ (g), (b)
 $\langle [NP_a]^{s,g}, \{x \mid [S_b]^{s,g[1 \rightarrow x]} = 1\} \rangle \in [every]^{s,g}$ (h)
 $[[NP_a]^{s,g} \subseteq \{x \mid [S_b]^{s,g[1 \rightarrow x]} = 1\}$ (c), (e)
 $[[NP_a]^{s,g} \subseteq \{x \mid [VP_a]^{s,g[1 \rightarrow x]} \in \{A \mid [t^2]^{s,g[1 \rightarrow x]} \in A\}\}$ (a), (h)
 $[[NP_a]^{s,g} \subseteq \{x \mid [t^1]^{s,g[1 \rightarrow x]} \in [VP_a]^{s,g[1 \rightarrow x]}\}$ (h)
 $[[NP_a]^{s,g} \subseteq \{x \mid x \in [VP_a]^{s,g[1 \rightarrow x]}\}$ (k)
 $[[NP_a]^{s,g} \subseteq \{x \mid x \in \{y \mid \langle y, [DP_c]^{s,g[1 \rightarrow x]} \rangle \in [V_{t,a}]^{s,g[1 \rightarrow x]}\}\}$ (f)
 $[[NP_a]^{s,g} \subseteq \{x \mid \langle x, [DP_c]^{s,g[1 \rightarrow x]} \rangle \in [V_{t,a}]^{s,g[1 \rightarrow x]}\}$ (h)
 $[[NP_a]^{s,g} \subseteq \{x \mid \langle x, [herself^1]^{s,g[1 \rightarrow x]} \rangle \in [V_{t,a}]^{s,g[1 \rightarrow x]}\}$ (b)x2
 $[[NP_a]^{s,g} \subseteq \{x \mid \langle x, x \rangle \in [V_{t,a}]^{s,g[1 \rightarrow x]}\}$ (c)
 $[[NP_a]^{s,g} \subseteq \{x \mid \langle x, x \rangle \in [saved]^{s,g[1 \rightarrow x]}\}$ (b)
 $[[NP_a]^{s,g} \subseteq \{x \mid x \text{ saved } x \text{ in } s\}$ (c), (e)
 $\{x \mid x \text{ is a girl in } s \text{ and } x \text{ loves } x \text{ in } s\} \subseteq \{x \mid x \text{ saved } x \text{ in } s\}$ i above