

0. Announcements

-Exam 1: Wednesday, March 10th.

-Grading scale:

A	95-100	A-	90-94	B+	84-89
B	77-83	B-	70-76	C+	62-70
C	54-62	C-	46-54	D	40-45

1. Current Grammar

(i) *Inventory of denotations*. Let D be the set of all individuals that exist in the real world. Possible denotations are: Elements of D; Elements of {0,1}; Subsets of D; Subsets of DxD; Subsets of {A | A ⊆ D}; Subsets of {<A,B> | A,B ⊆ D}; ∩, ∪, '.

(ii) *Lexicon*

N: $[[Emery]]^s = \text{Emery}, \dots$

V: $[[smile]]^s = \{x \mid \text{smile}(x)(s)\}, be_1 \text{ (vacuous)}$

V_t: $[[save]]^s = \{<x,y> \mid \text{save}(x)(y)(s)\}, \dots$

A: $[[nice]]^s = \{x \mid \text{nice}(x)(s)\}, \dots$

A_t: $[[fond]]^s = \{<x,y> \mid \text{fond}(x)(y)(s)\}, \dots$

N_{pred}: $[[cat]]^s = \{x \mid \text{cat}(x)(s)\}, \dots$

N_{pred,t}: $[[fan]]^s = \{<x,y> \mid \text{fan}(x)(y)(s)\}, \dots$

P: $[[around]]^s = \{x \mid \text{around}(x)(s)\}, \dots$

P_t: $[[near]]^s = \{<x,y> \mid \text{near}(x)(y)(s)\}, \dots$

Conj: $[[and]]^s = \cap, [[or]]^s = \cup$

Neg: $[[not]]^s = '$

T: be_2 (We will neglect for now the semantic contribution of the T node.)

D: a_1 (vacuous)

$[[some]]^s = \{<A,B> \mid A \cap B \neq \emptyset\}; [[no]]^s = \{<A,B> \mid A \cap B = \emptyset\};$

$[[every]]^s = \{<A,B> \mid A \subseteq B\}; [[two]]^s = \{<A,B> \mid |A \cap B| \geq 2\};$

$[[a]]^s = \{<A,B> \mid |A \cap B| \geq 1\}; [[one]]^s = \{<A,B> \mid |A \cap B| \geq 1\}.$

(iii) *Syntactic rules*

S → DP (T) VP	DP → D NP
S → NP (T) VP	NP → N _{pn}
NP → AP NP	NP → NP PP
NP → N	NP → N _t PP
VP → V ({DP/AP/PP})	VP → V _t NP
AP → A	AP → A _t PP
PP → P	PP → P _t NP
XP → Neg XP, where X ∈ {V, A, P, D}	
XP → XP Conj XP, where X ∈ {N, V, A, P, D}	

(iv) *Semantic rules of composition*

For any situation s ,

- (a) If α has the form $[_S \text{ NP (T) VP}]$, $[[\alpha]]^s = 1$ iff $[[\text{NP}]]^s \in [[\text{VP}]]^s$.
- (b) If α is a non-branching node whose daughter node is β , then $[[\alpha]]^s = [[\beta]]^s$.
- (c) If α is a terminal node, then $[[\alpha]]^s$ is specified in the lexicon.
- (d) If α has the form $[_{XP_1} \text{ XP}_2 \text{ Conj XP}_3]$, $[[\alpha]]^s = [[\text{XP}_2]]^s [[\text{Conj}]]^s [[\text{XP}_3]]^s$.
- (e) If α has the form $[_{XP_1} \text{ Neg XP}_2]$, $[[\alpha]]^s = [[\text{XP}_2]]^s [[\text{Neg}]]^s$.
- (f) If α has the form $[_{YP} \text{ Y}_t \text{ ZP}]$, $[[\alpha]]^s = \{x \mid <x, [[\text{ZP}_2]]^s > \in [[\text{Y}_t]]^s\}$.
- (g) If α has the form $[_{YP/ZP} \text{ YP ZP}]$, $[[\alpha]]^s = [[\text{YP}]]^s \cap [[\text{ZP}]]^s$.
- (h) If α has the form $[_{DP} \text{ D NP}]$, $[[\alpha]]^s =$
- (i) If α has the form $[_S \text{ DP (T) VP}]$, $[[\alpha]]^s =$

2. Practice

- (1) Mats is a brown-eyed bear.
- (2) Every brown-eyed bear is sleeping.
- (3) Three professors and two students are sleeping.
- (4) Mats and Karen are running.

3. References on Generalized Quantifiers

Barwise, John and Robin Cooper. 1981. Generalized Quantifiers and Natural Language. *Linguistics and Philosophy* 4, pp. 159-219.

Lewis, David. 1972. General Semantics. In D. Davidson and G. Harman (Eds.) *Semantics of Natural Languages*. Dordrecht: Reidel. ppp. 169-218.

Montague, Richard. 1974. Formal philosophy, selected papers of Richard Montague. New Haven: University Press. Edited by R. Thomason.

Mostowski, A. 1957. On a Generalization of Quantifiers. *Fundamenta Mathematica*, 44, pp. 12-36.

Stanford Encyclopedia of Philosophy.

<http://plato.stanford.edu/entries/generalized-quantifiers/>