Lecture #9

24.979 Topics in Semantics

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The Setup

(1) **The Condition** (cf. Kadmon & Landman 1993)
A DP headed by *any* is acceptable only if its resource domain is dominated by a constituent that is SER, but not SEP, with respect to it.

There were three ingredients ('rescue mechanisms') to our account:

- Exhaustification (free choice inferences)
- Existence presupposition
- (Obligatory) pruning of alternatives

The Setup

(2) a. John is allowed to read any book.

b. $[\text{exh}_R\ [_S\ \Diamond\ [\text{any}^{str}_D\ \text{book}\ [\lambda x\ \text{John read x}]]]]$

Existence presupposition (ambiguous existential quantifiers)

(3) $[\![\text{any}^{str}_D]\!](P)(Q)$ is defined only if $\exists x(D(x) \wedge P(x))$. If defined, $[\![\text{any}^{str}_D]\!](P)(Q) = 1$ iff $\exists x(D(x) \wedge P(x) \wedge Q(x))$.

Exhaustification, obligatory pruning

(4) $[\![\text{exh}_R\ S]\!](w) = 1$ iff

(i) $[\![S]\!](w)\ \wedge$

(ii) $\forall S' \in \text{Excl}(S) \cap [\![R]\!]\colon\ \neg[\![S']\!](w)\ \wedge$

(iii) $\forall S' \in \text{Incl}(S)\colon [\![S']\!](w)$

(5) $[\![R]\!] \subseteq \text{Excl}(S)$

The Setup

(6) a. John is allowed to read any book.

b. [exh$_R$ [$\Diamond$ [any$_D^{str}$ book [λx John read x]]]]

Existence presupposition and pruning restriction guarantee Strawson entailment (the pertinent conjuncts are marked with green; blue conjuncts are innocuous)

(7) $\Diamond$(J read a book in D) $\wedge$
$\forall$D'(D'$\subseteq$D$\cap$book $\wedge$ D'$\cap$book$\neq\emptyset$ $\rightarrow$ $\Diamond$(J read a book in D)) $\wedge$
$\forall$D'(D'$\subseteq$D$\cap$book$\wedge$card(D'$\cap$book)$\geq$2$\rightarrow\neg\Diamond$(J read every book in D') $\wedge$
$\forall$D'(D'$\cap$D$=\emptyset$ $\rightarrow\neg\Diamond$(J read a book in D')

(8) Existence: There exists books in D$^+$.
Alt's: The relevant alternatives are a subset of Excl(... any$_D$ ...).

$\Rightarrow$

(9) $\Diamond$(J read a book in D$^+$) $\wedge$
$\forall$D'(D'$\subseteq$D$^+\cap$book $\wedge$ D'$\cap$book$\neq\emptyset$ $\rightarrow$ $\Diamond$(J read a book in D)) $\wedge$
$\forall$D'(D'$\subseteq$D$^+\cap$book$\wedge$card(D'$\cap$book)$\geq$2$\rightarrow\neg\Diamond$(J read every book in D') $\wedge$
$\forall$D'(D'$\cap$D$=\emptyset$ $\rightarrow\neg\Diamond$(J read a book in D')

The Setup

Adding universal modal alternatives does not affect the results:

(10) $\Diamond$(J read a book in D) $\wedge$
$\forall$D'(D'$\subseteq$D$\cap$book $\wedge$ D'$\cap$book$\neq\emptyset \rightarrow \Diamond$(J read a book in D)) $\wedge$
$\forall$D'(D'$\subseteq$D$\cap$book$\wedge$card(D'$\cap$book)$\geq$2$\rightarrow\neg\Diamond$(J read every book in D') $\wedge$
$\forall$D'(D'$\cap$D$=\emptyset \rightarrow\neg\Diamond$(J read a book in D') $\wedge$
$\forall$D'(D'$\subseteq$D $\rightarrow \neg\Box$(J read a book in D'))

(11) Existence: There exists books in D^+.
Alt's: The relevant alternatives are the subset of Excl(... any_D ...).

$\Rightarrow$

(12) $\Diamond$(J read a book in D^+) $\wedge$
$\forall$D'(D'$\subseteq D^+\cap$book $\wedge$ D'$\cap$book$\neq\emptyset \rightarrow \Diamond$(J read a book in D))$\wedge$
$\forall$D'(D'$\subseteq D^+\cap$book$\wedge$card(D'$\cap$book)$\geq$2$\rightarrow\neg\Diamond$(J read every book in D')$\wedge$
$\forall$D'(D'$\cap$D$=\emptyset \rightarrow\neg\Diamond$(J read a book in D') $\wedge$
$\forall$D'(D'$\subseteq D^+ \rightarrow \neg\Box$(J read a book in D'))

Preview

Defending uniformity

Embedding restrictions (prediction 1)

Further quantifiers (prediction 2)

Scope (prediction 3)

Quirky sets of alternatives (prediction 4)

Defending uniformity

Ambiguity vs. uniformity of any

Recall that the discussion of the necessity of the existence presupposition and its consequences can be seen as, instead of a good prediction of the account, an exercise in defusing arguments against a uniform treatment of *any*.

(13) #It's okay that there is anyone in the garden.

(14) a. #It's okay that there is everyone in the garden.
b. It's okay that there is someone in the garden.

(15) #It's okay that there are some of the people in the garden.

But there are other obstacles for the uniformity theory, which Frank brought up last time...

Exceptive modification

Frank observed that connected exceptives may modify free choice *any*. The same holds for *almost*. Historically, these types of data were used by Carlson (et al.) to problematize a uniform treatment of *any*.

(16) a. John is allowed to read any book except A.
b. John is allowed to read almost any book.

(17) a. John (is allowed to) read {every/no/#a} book except A.
b. John (is allowed to) read almost {every/no/#a} book.

Fortunately, we know also that other occurrences of *any* can be so modified:

(18) a. John didn't read any book but A.
b. ?If you had read almost any book, you would have known this.

(There are some differences between the two, see Spector 2014 on *almost*:

(19) a. John doubts that (#almost) anyone except Bill is in that room.
b. Has (#almost) anyone but Bill been here before?)

Exceptive modification: Gajewski

Guiding intuition can be the (possible) paraphrases of the sentences:

(20) a. John is allowed to read any book but A.
b. Every book but A is such that John is allowed to read it.

(21) a. John didn't read any book but A.
b. John read no book but A.
(suggestive paraphrases only)

Gajewski 2008 proposes that the constraints determining the acceptability of exceptives may (at least sometimes) apply at a non-local level.

Base cases (von Fintel 1993)

(22) a. Every boy but John arrived.
b. Every boy that is not in {John} arrived ∧
∀E: Every boy that is not in E arrived → {John}⊆E.

(23) a. #Some boy but John arrived.
b. #Some boy that is not in {John} arrived ∧
∀E: Some boy that is not in E arrived → {John}⊆E.

Exceptive modification: Gajewski 2008

Some assumptions (more sophisticated treatments possible/desirable):

(24) a. $[\![\text{but}]\!] = \lambda E_{et}.\ \lambda P_{et}.\ P \backslash E$

b. $[\![\text{OP A}]\!] = \lambda p_{(et)(st)}.\lambda w.\ p(\{[\![A]\!]\})(w) \wedge \forall E\text{: } p(E)(w) \rightarrow \{[\![A]\!]\} \subseteq E$

(25) a. Every boy but John arrived.

b. [OP John] [λE [[every boy but E] arrived]]

c. Every boy that is not in {John} arrived $\wedge$
$\forall$E: Every boy that is not in E arrived $\rightarrow$ {John}$\subseteq$E

Back to cases with *any*:

(26) a. John didn't read any book but A.

b. [OP W] [λE [neg [any book but E] λx [John read x]]

c. No boy that is not in {John} arrived $\wedge$
$\forall$E: No boy that is not in E arrived $\rightarrow$ {John}$\subseteq$E

(See Gajewski 2013, Hirsch 2016, Crnič 2018 for alternative implementations.)

Back to free choice

Constituent [exh$_R$ [$\Diamond$ ...]] in (27) is SER with respect to D, as above

(27) a. John is allowed to read any book but A.

b. [OP A] λE [exh$_R$ [$\Diamond$ [any$^{str}_D$ book but E [λx J read x]]]]

Deriving the meaning (asuming an appropriate R):

(28) $\forall$D'(D'$\cap$book$\setminus${A}$\neq\emptyset \wedge$ D'$\subseteq$D

$\rightarrow \Diamond$J read a book not in {A} in D') $\wedge$

$\forall$E: $\big(\forall$D'(D'$\cap$book$\setminus$E$\neq\emptyset \wedge$ D'$\subseteq$D

$\rightarrow \Diamond$J read a book not in E in D')$\big) \Rightarrow$ {A} $\subseteq$ E.

Optional homework: How does acceptability vary with different R's?

Frank's (and Gajewski's) remaining puzzle

There is discrepancy in the distribution of *any* and other indefinites. (See Gajewski 2008 for some speculation about this.)

(29) #John is allowed to read a book except A.

(30) #John is allowed to read almost a book.

But notice that non-connected exceptives appear to be better behaved:

(31) a. Except for War and Peace, John read {every/no/#a} book.
b. Except for War and Peace, John didn't read a book.
c. Except for War and Peace, John is allowed to read a book.

Another overgeneration puzzle involving licensing of NPIs:

(32) John is allowed to read any book that was ever banned.

(33) #John is allowed to read a book that was ever banned.

(34) a. <>John isn't allowed to read a book that was ever banned.
b. <>I didn't read a book that any of my professors wrote.

Moving towards predictions

Exhaustification

- Embedding restrictions
  (cf. Alonso-Ovalle 2005, Fox & Spector 2009, etc.)
- Further quantifiers (modals)
- Scope of *any*
- Quirky sets of alternatives

  (Too many alternatives)

Existence inferences

- Inability to trigger existence inferences

  (Definiteness effect, Impossibility of strong construal/topicalization)

Embedding restrictions (prediction 1)

Free choice tracks accessibiliy of embedded exh

Accessibility of embeded implicatures (cf. Levinson 2001, Fox & Spector 2009)

(35) If the boys (are allowed to) read A or B, they must be happy.

(36) The boys aren't allowed to/didn't read A or B.

This is tracked by accessibility of free choice construal (cf. Alonso-Ovalle 2005)

(37) If the boys are allowed to read any book, they must be happy.

(38) The boys aren't allowed to read any book.

Further quantifiers (prediction 2)

Any and free choice with universal modals

Any is unacceptable under universal modals

(39) *John is required to read any book.

(40) *In order to pass the exam, you have to read any book.

Though free choice inferences are generated with universal modals as well:

(41) John is required to read A or B

$\Rightarrow$ John is allowed to read A.

$\Rightarrow$ John is allowed to read B.

Free choice with universal modals

(42) a. John is required to read A or B.
b. [exh$_R$ [□ [John read A or B]]]

Ignoring existential modal alternatives (perhaps illegitimately so)

(43) a. Excl([□ [A or B]]) = {□A, □B, [□[A and B]]}
b. Incl([□ [A or B]]) = ∅

(44) $\Box(A \vee B) \wedge \neg\Box A \wedge \neg\Box B \left(\Rightarrow \Diamond A \wedge \Diamond B\right)$

Not ignoring existential modal alternatives

(45) a. Excl([□ [A or B]]) = {[□[A and B]], [◊ [A and B]]}
b. Incl([□ [A or B]]) = {[□ [A or B]], ◊A, ◊B}

(46) $\Box(A \vee B) \wedge \Diamond A \wedge \Diamond B \wedge \neg\Diamond(A \wedge B)$

Back to any

(47) a. *John is required to read any book.
b. [exh$_R$ [□ [any$_D^{str}$ book [λx John read x]]]]

Lack of Strawson entailment reversal (no matter the choice of alternatives)

(48) □(J read a book in D) ∧ ∀D': D'⊂D→¬□(J read a book in D')
$\not\Rightarrow_s$ □(J read a book in D$^+$) ∧ ∀D': D'⊂D$^+$→¬□(J read a book in D')

(49) □(J read a book in D) ∧ ∀D': D'⊂D→◇(J read a book in D')
$\not\Rightarrow_s$ □(J read a book in D$^+$) ∧ ∀D': D'⊂D$^+$→◇(J read a book in D')

Thus, the unacceptability of *any* under universal modals is correctly predicted.
What inferences and acceptability are predicted for (50)? (optional homework)

(50) <>John may require Mary to read any book.

Overgeneration

Any is unacceptable in unembedded disjunctive sentences

(51) a. #John read New Yorker or any book.

b. [exh$_R$ [[J read New Yorker] [or [any$_D^{str}$ book [λx J read x]]]]]

c. $\approx$ Every book is such that John read New Yorker or it
(and John didn't read New Yorker or every book, etc.)

Perhaps similar* NPIs in Greek behave differently (cf. Giannakidou 1999):

(52) a. #tha Ilectra ipe oti akuse kanenan thorivo.
'Electra said she made any noise'

b. O papus dhen idhe kanena apo ta egonia tu.
'Grandpa didn't see any of his grandkids.'

c. I bike kanenas mesa i afisame to fos anameno.
'Anyone broke into the house or we left the light on.'

Overgeneration, continued

Similar patterns are found with other existential quantifiers:

(53) a. #Some boys read any book.
b. #John has any brothers.

But there may be some exceptions (Danny Fox, p.c.):

(54) a. <? >There is beer in any (of those) fridge(s).
b. <? >There are gifts in any (of those) cereal box(es).

In any case, it is obvious that exhaustification + existence presuppositions as a rescue mechanisms are constrained by some yet-to-be-identified mechanism. We may briefly return to such examples once we discuss **intervention effects.**

Scope (prediction 3)

Obligatory narrow scope

(55) a. John is allowed to read any book.
b. [exh$_R$ [$\Diamond$ [any$_D^{str}$ book [λx [John read x]]]]]
c. #[exh$_R$ [any$_D^{str}$ book [λx [$\Diamond$ [John read x]]]]]

Blocking reconstruction (e.g., May 1985)

(56) a. Any defendant was permitted by the court to be late once.
b. [exh$_R$ [permitted by the court [any defendant to be late once]]]

(57) a. Every defendant$_i$ was permitted by her$_i$ lawyer to be late once.
b. *[permitted by her$_i$ lawyer [every defendant$_i$ to be late once]]
c. [every defendant λx [permitted by her$_x$ law. [x to be late once]]]

(58) a. *Any defendant$_i$ was permitted by her$_i$ lawyer to be late once.
b. *[exh$_R$ [permitted by her$_i$ lawyer [any$_D^{str}$ def.$_i$ [to be late once]]]]
c. *[exh$_R$ [any$_D^{str}$ def. λx [permitted by her$_x$ law. [x to be late once]]]]

Apparent counterexample

Antecedent Contained Deletion is an apparent counterexample:

(59) a. John is allowed to read any book that Mary was $\triangle$.
b. [exh$_R$ [[any$_D^{str}$ book [λx $\Diamond$ [M$_F$ read x]]] λx $\Diamond$ [J is read x]]]

Potential resolution: subtrigging analysis

(60) a. John read any book [that Mary gave him]
b. John read any book [that Mary did $\triangle$]

Two potential predictions on this analysis:

(61) John was required to read any book #(that Mary was $\triangle$).

(62) ?John read any of those books that Mary gave him. (Dayal 2009)

(63) a. John is allowed to read any of those books.
b. <>John is allowed to read any of those books that Mary was.

Quirky sets of alternatives (prediction 4)

Divisive predicates

Divisiveness, homogeneity (e.g., Cheng 1973)

(64) P is divisive iff

a. $\forall x\ (P(x) \rightarrow \exists y(y \sqsubset x))$, and

b. $\forall x,y\ (P(x) \wedge y \sqsubseteq x \rightarrow P(y))$ (homogeneous)

Consequence 1

(65) For every D divisive, P homogeneous:

$\exists x(D(x) \wedge P(x)) \Rightarrow \exists D' \subset D\colon \exists x(D'(x) \wedge P(x))$

Consequence 2 (see Fox & Hackl 2006 for a related generalization)

(66) If NP, VP denote divisive predicates, every alternative is excludable

(The predictions discussed here are developed in Crnič & Haida, in prep.)

Mass predicates

Mass predicates are divisive (e.g., Cheng 1973)

(67) a. gold, water, beer (also: furniture, mail)
b. not: boy, cat, girls

(68) a. boil, be in the bottle
b. not: weigh 2 grams

Homogeneity Constraint (e.g., Lønning, Higginbotham)

(69) a. Some water boiled.
b. *Some water weighs 2 grams.

Mass predicates

(70) a. #You may take any beer.
b. #John is allowed to drink any water.

(unless 'any bottle of beer' or 'any kind of beer', etc.)

(71) a. #We may donate any blood.
b. #We may buy any furniture.

Degrees

Imagine a less well-worn (perhaps) approach to degree semantics: gradable adjectives denote relations between (possible) objects ($[\![\text{J tall}]\!] \approx \lambda y.$ J is at least as tall as y), that is, degrees correspond to sets of individuals ('sets of possible objects'), etc. (cf. Bale 2011, Schwarzschild 2013, i.a.)

On this approach, a degree quantifier may/must be treated as a quantifier over (possible) objects, that is, its domain would consist of possible objects. And so the domain of this quantifier should be divisive (equivalently, the domain of differentials *much, any,* etc., consists of intervals) ...

(72) John is much taller than Mary.

Prediction

(73) a. John isn't any taller than Mary.
b. #You are allowed to be any taller than this (to take this ride).

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